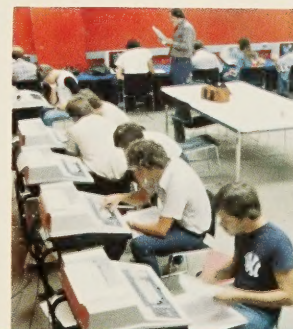
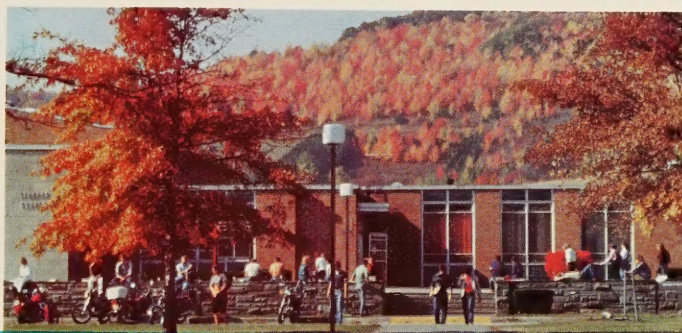
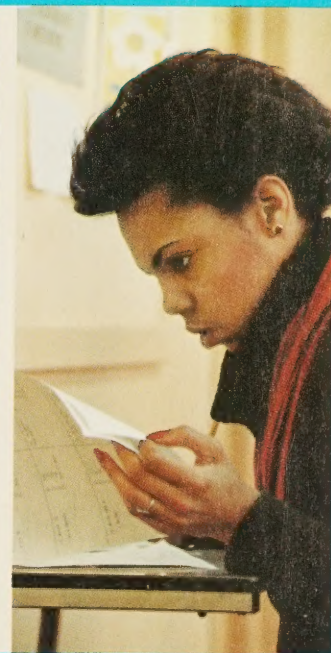


Bröome Community College

1983 - 1984 Catalog



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ACCREDITATION

Broome Community College is a member of the Middle States Association of Colleges and Schools.

The College is supervised by the State University of New York, and its curriculums are registered by the State Education Department.

The Civil, Chemical, Electrical and Mechanical Engineering Technology programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc., (ABET). It was formerly known as the Engineers Council for Professional Development (ECPD).

The Dental Hygiene program is accredited by the Council on Dental Education of the American Dental Association, and the Nursing curriculum is accredited by the National League for Nursing.

The Council on Medical Education of the American Medical Association (AMA) has accredited three other curriculums—Radiologic Technology, Medical Record Technology and Medical Assistant, which is also accredited by the American Association of Medical Assistants. The Medical Record Technology program has double accreditation, too, having been approved by the American Medical Record Association as well as by the AMA. The Medical Laboratory Technology curriculum is a candidate for accreditation by The National Accrediting Agency for Clinical Laboratory Sciences.

NON-DISCRIMINATION COMMITMENT

Broome Community College, in compliance with Title VI of the Civil Rights Act of 1964 and Title IX of the Education Amendments of 1972, does not discriminate on the basis of race, sex, religion, national origin, age, handicap, color, or marital status in admissions, employment and treatment of students and employees.

It is the policy and intent of the College, moreover, to comply with Section 504 of the Rehabilitation Act of 1973 as amended, which states:

"No otherwise qualified handicapped individual in the United States, as defined in section 7 (6), shall, solely by reason of his handicap be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Questions and further information on these subjects should be directed to the College's Affirmative Action Officer or Coordinator for the Disabled.

THE COLLEGE PHONE NUMBER HAS BEEN CHANGED TO (607) 771-5000.

The College reserves the right at any time to make changes deemed advisable or necessary.

For information about the college, its programs, and its admissions procedure contact

Office of Admissions
Broome Community College
P.O. Box 1017
Binghamton, New York 13902

Broome Community College

Binghamton, N.Y. 13902

1983 - 1984 Catalog

A Comprehensive Community College
Supervised by the
State University of New York and
Sponsored by the County of Broome



49 COLLEGE PROGRAMS OF STUDY

DEGREE-GRANTING CURRICULUMS IN 30 FIELDS OF STUDY

Business

- 1-Accounting
- * 2-Business Administration
- 3-Marketing Management and Sales Secretarial
- 4-Executive
- 5-Engineering (Industrial)
- 6-Office Services Assistant

Computer Studies

- * 7-Computer Science
- 8-Data Processing-Business
- 9-Data Processing-Technical

Engineering and Engineering Technology

- 10-Chemical Engineering Technology
- 11-Civil Engineering Technology
- 12-Electrical Engineering Technology
- * 13-Engineering Science
- 14-Industrial Technology
- 15-Mechanical Engineering Technology

Health Sciences

- 16-Dental Hygiene
- 17-Medical Assistant
- 18-Medical Laboratory Technology
- 19-Medical Record Technology
- 20-Nursing
- 21-Radiologic Technology

- * 22-Liberal Arts and Sciences
- Associate in Arts Degree
- Associate in Science Degree

Special Programs

- 23-Child Care
- 24-Criminal Justice-Police
- 25-Fire Protection Technology
- 26-Individual Studies
- 27-Industrial Safety and Occupational Hygiene
- 28-Paralegal Assistant

Other Programs

- 29-Tool and Die Making
- 30-Automotive Service Specialist
- (No new students being accepted)

Unless otherwise indicated, degree programs are occupational in nature and designed to prepare graduates for immediate employment.

*These programs are designed to prepare graduates for transfer to four-year colleges and universities in the third, or junior, year.

DIPLOMA PROGRAMS IN 15 FIELDS OF STUDY

These programs generally consist of half the number of credits in an associate degree curriculum and are, therefore, the equivalent of one year of college study. Most are given in the evening.

Business with emphasis in:

- 1-Accounting
- 2-Management
- 3-Marketing—Sales and Retailing

4-Child Care

5-Criminal Justice

6-Fire Protection Technology

Industrial Technology with emphasis in:

- 7-Chemical
- 8-Civil
- 9-Computer Studies
- 10-Electrical
- 11-Industrial Safety and Occupational Hygiene
- 12-Mechanical
- 13-Production Management

14-Liberal Arts

15-Paralegal Assistant

CERTIFICATE PROGRAMS IN 4 FIELDS OF STUDY

These programs lead to certificates in areas for which entry-level employment does not require an associate degree, or they consist of a concentration of studies in a particular area which may be up to a year of college work:

- 1-Dietetic Assistant
- 2-General Office
- 3-Interior Design
- 4-Machinist Related Instruction

HOW TO USE THIS CATALOG

To help readers find their way through the pages of this catalog, a few words of explanation may be helpful. The catalog is assembled in essentially five parts, as follows:

PART 1, which consists of pages 1 to 31, contains the policies, procedures and regulations of the College. And as the accompanying table of contents shows, these are divided into such areas as admissions, financial aid, expenses, academic affairs and student affairs.

PART 2, which runs from pages 32 to 57, is a rundown of the College's programs and curriculums, arranged in alphabetical order. It shows the courses taken by students in each semester, along with the number of class hours, laboratory hours and credits for each. A summary of the field for which each curriculum prepares its graduates is also included.

PART 3, from pages 58 to 69, is directed to part-time students. It has

important academic information for them including a presentation of the programs of study for them for degrees, certificates and diplomas, as well. It also includes information about the College's Center for Community Education and its non-credit offerings (Page 69).

PART 4, covering pages 70 to 122, carries the descriptions of the college's courses. These are arranged in alphabetical order, according to subject matter, starting with Accounting and other business courses.

PART 5, which appears on pages 123 to 135, is essentially the listing of the administration and faculty of the College. There is also information about the State University of New York, of which the College is a part.

Attention is also directed to the **INDEX** on pages 133 to 135. This is an alphabetical listing of the topics covered in the catalog together with the page numbers where one can find them.

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COLLEGE MISSION AND GOALS STATEMENTS

Broome Community College is a public, comprehensive, two-year institution providing the following range of educational services to its students:

1. Arts and Science transfer degrees; 2. Occupational degree and certificate programs in allied health, business and engineering technology; 3. Developmental learning program; 4. Student and administrative services; and 5. Continuing education and community service activities and programs.

As an open enrollment institution, Broome Community College provides a quality, low-cost, geographically convenient program to the varied student populations in its service region.

GOALS

1. Opportunity—Given Broome Community College's mission to provide access for Broome County's recent high school graduates and veterans as well as many adults who are seeking a college education, either full- or part-time, the College offers a Full Opportunity admissions process.

2. Diversity—Given the comprehensive mission of the College, diverse academic and student development services are provided to a wide range of individuals.

3. Community—Given the emphasis to improve economic development and quality of life in the region, the College, in addition to its credit course offerings, has a commitment to provide business, industries and agencies with a variety of public service education and training programs.

4. Quality—Given the premise that the College program requires constant and thorough scrutiny by faculty and administration, evaluation processes are utilized, internally and externally, to preserve and improve upon their excellence.

5. Governance—Given numerous internal and external governance processes or agencies which impact upon the College, input from these sources is ap-

propriately utilized to formally and informally affect the College's mission and operations.

6. Resources—Given the need to sustain as well as improve the College's program and also keep pace with the accelerating knowledge explosion in education, it becomes increasingly important to provide for necessary levels of physical, fiscal and human resources to obtain these results.

AUTHORIZATION

Broome County is the sponsor of Broome Community College, which was established in 1946 and is one of the oldest community colleges in the State University of New York (SUNY) system. The College is governed by a Board of Trustees and funded by annual appropriations (operational and capital) from state and county funds, and students pay up to one-third of the college's operating costs through tuition. Five of the trustees are appointed by the County Executive, with approval of the County Legislature, and four by the Governor. County and trustee governance policy and practice are based on a mutually determined modified "Plan C" resolution of County Government.

The College President is appointed by the College Board of Trustees, with approval of the Chancellor of the State University of New York and the SUNY Board of Trustees. His/her direct supervisor is the chairman of the College Board of Trustees. The SUNY Chancellor provides an umbrella type of leadership to the president through a deputy for community colleges to insure that appropriate SUNY policies and regulations and State Education Department (SED) guidelines for post-secondary institutions are followed.

Degree granting authority for Broome Community College is given by the Board of Regents of the University of the State of New York, and the College's academic program is accredited by the Middle States Association of Colleges and Schools.

DEFINITION

Since the date of charter in 1946, as the New York State Institute of Applied Arts and Sciences at Binghamton, the College has moved from a limited access technical institute to a comprehensive community college with a Full Opportunity enrollment policy. Broome Community College is organized into three primary divisions: academic, administrative, and student services, each of which is administered by a Vice President reporting to the College President.

The Board of Trustees establishes College policy, and the Administration interprets and implements it, working in conjunction with the Sponsor, SUNY, SED, and the various accrediting bodies who evaluate and make recommendations on the objectives and outcomes of the college program.

Broome Community College emphasizes classroom and applied laboratory educational activities rather than being a research institution. By developing a quality program and excellence in teaching, the College provides diversified educational opportunities to individuals of varied ages. A particularly attractive feature of the College is that it draws most students from the geographic region known as Broome County. It provides an important link with the communities of Broome County and the surrounding regions in the Southern Tier of New York State, making social, economic and cultural contributions to recipients of these services.

The College provides students with a broad spectrum of both humanistic and scientific/technological related competences through its 30 degree programs and its 19 diploma and certificate programs. The College is approved by the New York State Board of Regents to offer Associate in Arts (AA), Associate in Science (AS), Associate in Applied Science (AAS), and Associate in Occupational Studies (AOS) degrees.

Enrollment includes both full- and part-time students attending day and/or evening classes. Classes run from 8 a.m. to 10 p.m. weekdays, and there are a number of weekend classes.

Admissions

ADMISSIONS PROCEDURES

Students are selected as they apply, complete the admissions process, and are found suitably qualified for a particular program. The following items are required by the Admissions Office before a decision can be made on a student's application:

1. Application for admission.
2. A non-refundable \$10 application fee. (If the applicant is reapplying, seeking admittance into a part-time Early Admissions program, or is a qualified Educational Opportunity Program (EOP) applicant, then this fee does not have to be paid).
3. Official transcript(s) of all high school and any previous college work as of the date of application.

Here are a few items to note concerning the application process:

1. Students interested in any Health Science curriculum—full-time or part-time—must apply through the Admissions Office. Students who wish to enroll full-time in any of the College's other programs must also apply through the Admissions Office. Students interested in part-time study should contact the Office of Academic Advisement in Room 207 of Wales Building in other than Health Science programs.
2. American College Testing (ACT) or Scholastic Aptitude Test (SAT) score reports are not required, but if either or both are available they should be forwarded to the Admissions Office.
3. Recommendations from high school personnel are helpful, if available.
4. An interview with an Admissions Counselor at Broome Community College is desirable.
5. The postmark date of an application is an important

part of the admissions criteria and helps the College implement its first-come, first-served equal opportunity policy.

6. Most programs require that prerequisite courses are successfully completed by June 30 of the summer preceding fall enrollment.

Applicants should recognize that it is their responsibility, not a counselor's or admissions officer's, to complete the necessary forms for admission and to see that all required transcripts and/or other information are received and recognized by the Admissions Office counselors. Completing the application process is the first step toward matriculation, which also includes being accepted into a curriculum and enrolling in coursework.

Acceptance into Broome Community College only applies to the particular semester designated in the acceptance letter. If one does not attend then and wishes to enroll in a future semester, then he/she must reapply. Records are kept on file for three years, so the reapplication process usually involves merely filling out another application form, unless additional college coursework has been completed.

More information or answers to questions are available at the

Admissions Office
Broome Community College
Upper Front Street
P.O. Box 1017, Binghamton, NY 13902
Phone: (607) 771-5001

SPECIAL ADMISSIONS PROGRAMS

Early Admissions is a program for high achieving students who are in high school and can benefit from taking college-level courses, full or part-time, before graduating from high school. While high school seniors are usually enrolled in this program, qualified juniors and sophomores may also be eligible.

Anyone interested in part-time Early Admissions should contact the Admissions Office or his/her high school counselor for the special application form. Full-time applicants should use the regular new student application.

Educational Opportunity Program (EOP) is designed for students who are educationally and economically disadvantaged. It provides additional economic aid and remedial or developmental academic help. For more information, contact the Admissions office at BCC (Room 102 in the Wales Administration Building).

International Students (from other nations). Broome Community College is authorized under Federal Law to enroll non-immigrant alien students. For information, see page 25.

Non-High School Diploma applicants may qualify for a high school diploma by successfully completing 24 credit hours of course work at BCC or any college in a degree, diploma or certificate program. Students currently in high school or those having been out of high school less than one year typically cannot qualify for this program. Additional information is available at the Admissions Office.

Transfer Credit for students who have taken or are taking college level course work is subject to the approval of the chairperson of the student's academic department at BCC. Grades earned will not be entered into the cumulative grade-point average at Broome Community College. Students must in all cases submit to the College Admissions Office official transcripts of all college level work taken and/or being taken at another college before formal acceptance will be granted.

Students transferring courses to BCC will be required to complete in credit hours the equivalent of a semester's course of study at BCC for graduation. The determination of this minimum will be the responsibility of the department faculty sponsoring the curriculum, but in no case will the requirement be less than 12 semester credits.



FULL OPPORTUNITY PROGRAM

Broome Community College has a Full Opportunity Program, which is designed to give every individual a chance to fulfill his/her own personal goals and potential. This means that everyone who is a previous June graduate of a Broome County high school or a veteran from Broome County with a high school diploma is given priority and admission until March 1 and is guaranteed admission into the College, but not necessarily assured of space in the program of his/her choice. To be admitted into any program of study, all applicants must meet the academic requirements of that program. When an individual does not have the required academic background for a particular curriculum, he/she will be accepted into a program or selection of courses for which he/she is qualified if space is available. Some students may require more than two years to complete a program of study.

Admission to the College shall not be denied on the basis of age, disability, ethnic origin, nationality, political belief or affiliation, race, religion or sex.

TUITION DEPOSIT POLICY

Students admitted to the College prior to August 1 will be billed for a \$50 tuition deposit. This payment will be applied toward the Fall Semester tuition bill for those students who register. Students who do not register for the Fall Semester can obtain a refund of the tuition deposit, through the end of the first week of classes, by submitting a request in writing to the College Controller. At the end of the first week of classes, the tuition deposit is non-refundable.

HEALTH REQUIREMENTS FOR HEALTH PROGRAMS

A student's enrollment in one of the Health Science programs listed below is conditional upon passing a physical examination and obtaining appropriate immunizations when required. Students should contact the department chairpersons for specific information.

Medical Assistant
Nursing
Medical Laboratory Technology
Medical Record Technology
Radiologic Technology

ACADEMIC PREPARATION FOR ADMISSIONS

Curriculum	REQUIRED High School subjects	RECOMMENDED High School subjects
Business Accounting Marketing Bus. Admin. Secretarial		2 units Mathematics 2 units Science College preparatory courses Typewriting
*Chemical Engineering Technology	Regents Chemistry (Min. grade 74) Regents Algebra Regents Geometry Regents Intermediate Algebra and Trigonometry	Additional Regents Math, Science and Chemistry courses Physics
*Civil Engineering Technology	Regents Algebra (Min. grade 74) Regents Physics (Min. grade 65) or Gen. Physics (Min. grade 74) Regents Geometry Regents Intermediate Algebra and Trigonometry	Additional Mathematics Technical courses
†Computer Science	Regents Algebra Regents Geometry Regents Intermediate Algebra and Trigonometry Precalculus Math or Regents Advanced Algebra Min. grade 74, all courses	Additional Mathematics Science, Technical courses Computer Programming
†Data Processing	Regents Algebra Regents Geometry Intermediate Algebra or Regents Int. Alg. and Trig. (Min. grade 74, all courses)	Additional Mathematics Computer Programming Typewriting
†Data Processing Technical	Regents Algebra Regents Geometry Regents Intermediate Algebra and Trigonometry (Min. grade 74, all courses)	Additional Mathematics Physics Computer Programming Typewriting
†Dental Hygiene	Regents Algebra Regents Geometry Biology (Regents or General) Chem. (Regents or General) —Average grade of 80 required in these courses	Social Studies Typewriting
*Electrical Engineering Technology	Regents Algebra (Min. grade 74) Regents Geometry Regents Intermediate Algebra and Trigonometry Regents Physics (Min. grade 65) or Gen. Phys. (Min. grade 74)	Additional Mathematics Technical courses

*BCC has a developmental program that enables students lacking the proper academic preparation for the Civil, Chemical, Electrical and Mechanical Engineering Technology curriculums to take courses that will qualify them. They can take these courses at BCC or elsewhere during the summer preceding their enrollment.

The College reserves the right, however, to consider for admission only those applicants who have completed all prerequisites by June 30. Applicants who elect to take these courses during the spring and fall semesters would need three years to complete the curriculum.

Curriculum	REQUIRED High School subjects	RECOMMENDED High School subjects
*Engineering Science	Regents Algebra Regents Geometry Regents Intermediate Algebra and Trigonometry Precalculus Math or Regents Advanced Algebra —Min. grade 80, above courses Chem. (Regents or General) (Min. grade 74) Regents Physics (Min. grade 80) or Gen. Phys. (Min. grade 90)	Additional Mathematics Science courses Technical courses Computer Programming
Liberal Arts and Sciences	(Students should review degree/emphasis models on pages 45-48. These might help in selecting HS preparatory courses).	3 units Mathematics 2 units Science 3 units Foreign Language 3 units Social Studies
*Mechanical Engineering Technology	Regents Algebra (Min. grade 74) Regents Geometry Regents Intermediate Algebra and Trigonometry Regents Physics (Min. grade 65) or Gen. Phys. (Min. grade 74)	Additional Mathematics Technical courses
†Medical Assistant	Regents Algebra Biology (Regents or General) Chem. (Regents or General)	Additional Mathematics Science courses Typewriting
†Medical Laboratory Technology	Regents Algebra Regents Geometry Biology (Regents or General) Chem. (Regents or General)	Additional Mathematics Science courses
†Medical Record Technology	Regents Algebra Biology (Regents or General)	Additional Mathematics Science courses, Chemistry, Typewriting
†Nursing	Regents Algebra Biology (Regents or General) Chem. (Regents or General) —Min. grade 74, above courses	College preparatory courses
†Radiologic Technology	Regents Algebra Regents Geometry Biology (Regents or General) —Min. grade 74 for Biology (Starting in fall of 1984, another Science course will be required too)	Additional Mathematics Typewriting Physics (Regents or General) Chemistry (Regents or General)

ALL GRADES ARE FINAL CLASS AVERAGES AND NOT REGENT EXAM GRADES

†In these programs, Broome Community College gives priority for admissions to Broome County residents who will graduate from high school this academic year or are service veterans. . . . Students interested in a degree in the Health Science or Computer Studies curriculums who enter the College in another program are cautioned that there is no guarantee that a petition to transfer will be approved. They should discuss the possibilities with the appropriate department chairperson.

Considerable financial aid is available to students of Broome Community College, and the College maintains a Student Financial Aid office to help students. Information and applications for financial aid are sent to students who are seeking full-time enrollment when they apply for admission. Any part-time student planning to take 6 credit hours or more may qualify for financial aid by formally applying and being accepted into a degree, diploma or certificate program. Part-time students may receive information/applications by contacting the Student Financial Aid Office.

Financial aid at BCC falls into three broad categories—grants that do not have to be repaid, loans on which interest rates are usually low and that have to be repaid after graduation or leaving college, and part-time employment called Work-Study. Assistance usually comes from a combination of these resources commonly referred to as a "financial aid package."

STUDENT AND FAMILY RESOURCES

A student's financial need is a term used to describe the funds required by a student to pay for his/her college education in excess of the amount that he/she and parents can afford to pay. Financial need is determined by using a standardized formula, which defines the "initial" or "demonstrated" need. The formula:

Take the "total educational costs" and subtract the "parental contribution and student's summer earnings." This amount is the initial or demonstrated need.

The Financial Aid Office at Broome Community College operates on the premise that all parents and students have a responsibility to contribute as much as they can toward the cost of the student's education. This contribution plays the primary role in determining the actual initial need.

To qualify for financial aid, a student must be enrolled in a degree program of the College and be taking 6 credit hours or more, in addition to having an initial or demonstrated need. This need can be met in a number of different ways—a combination of grants, loans and work-study funds in varying amounts of each. This combination is put together by the financial aid administrator and is called a "financial aid package."

Many students would be unable to attend college without financial aid. However, no matter when application for financial aid is made, disbursement of awarded money is not always made on an "as needed" basis. Therefore, every student should have sufficient resources available for living and educational expenses for several weeks into a semester.

ESTIMATING EXPENSES

Listed below are charts showing the estimated average costs for the 1983-84 college year for student expenses, determined by whether or not the student lives at home and is dependent on his/her parents. These cover a 9-month period which is the length of the college year—September to May.

Expense Charts

FOR DEPENDENT STUDENTS

	*Single Commuter (living home)	*Resident (living near campus)
Tuition	\$ 800	\$ 800
Fees	63	63
Books	200	200
Transportation	400	500
Home Maintenance	1,100	NA
Personal Expenses	500	500
Room	NA	1,350
Board	NA	1,100
Total	\$3,063	\$4,513
Non-NY State Resident: (Additional tuition)	800	800
Total	\$3,863	\$5,313

FOR INDEPENDENT STUDENTS

	Single, Divorced, Widowed, Separated (no children)	Married, Head of Household one working or school (no children)	Married, Two working or school (no children)
Tuition	\$ 800	\$ 800	\$ 800
Fees	63	63	63
Books	200	200	200
Rent	1,350	1,854	1,854
Food	1,100	1,436	1,650
Clothing		441	492
Transportation	500	600	740
Recreation & Personal	500	550	550
Total	\$4,513	\$5,944	\$6,349
Non-NY State Resident: (Additional tuition)	800	800	800
Total	\$5,313	\$6,744	\$7,149

NOTES—

- * 1) A commuter is a student who lives with his/her parents and commutes to school; a resident is an out-of-town student residing locally.
- 2) Allowances for additional expenses are made for students in certain academic programs. See page 12 under heading "Books, Supplies, Uniforms."
- 3) Medical, child care, debt repayment, and miscellaneous expenses may be allowed if the student is able to document the cost.
- 4) Child care allowance—up to \$900 for each dependent child.
- 5) Transportation line includes auto insurance, license plates, maintenance. An additional allowance may be allowed depending on distance traveled from home to the College.

—ALL COSTS ARE SUBJECT TO CHANGE—

HOW TO APPLY FOR FINANCIAL AID

To be considered for financial aid, students must apply each academic year.

Federal and State Gifts

All financial aid applicants will be expected to apply for two major sources of financial aid—the Federal government's Pell Grant and the State's Tuition Assistance Program Award (TAP). Although the College provides information, applications and assistance, these funds are not generated by the College and must be applied for directly by the student to the agency. Further information regarding these and other problems is available at the Financial Aid Office (Wales Building, Room 101).

College Administered Financial Aid

To be considered for financial aid administered by the College, parents of dependent students and self-supporting students must submit the Financial Aid Form (FAF) to the College Scholarship Service and the College Application for Financial Aid to the Financial Aid office. By filing the forms outlined above, students will be considered for the following financial aids, about which further information is available at the Financial Aid Office (Wales Building, Room 101):

Federal

- National Direct Student Loan
- College Work Study
- Supplemental Educational Opportunity Grant
- National Nursing Loan
- National Nursing Scholarship

Institutional

- BCC Foundation Grant

The college administers a number of programs which have been established by private individuals, companies, and organizations. These scholarship and grant programs have varying eligibility requirements. Students who wish to apply for these special scholarships may request an application from the Financial Aid Office.

Priority Funding Dates

Fall Semester April 30
Spring Semester December 1

Incoming students should apply for financial aid when they apply for admissions. Because all college-based funds are limited, students are strongly encouraged to submit the appropriate forms far in advance of the above priority dates.

Completed applications received prior to April 30 will be given first priority. Applications received after this date will be considered as long as funds are available.

FAF should be mailed to College Scholarship Service before February 1 to be received at the College by April 30.

Notification of Decisions

Students are generally notified of the action taken on their application shortly after April 30. Students who apply late will be notified as folders are completed. A brochure explaining students' rights and responsibilities is sent to all financial aid recipients at the time the award is made. Interested students may receive a copy of this brochure before an award is made by contacting the Financial Aid Office.

If a student's request for aid is denied, the reasons for the decision are explained. Students may request an appeal on financial aid decisions by writing a letter to the Vice-President for Student Affairs.

Satisfactory Academic Progress for TAP

The College has adopted New York State Tuition Assistance Program (TAP) guidelines which require good academic standing for students to continue receiving financial aid. Contact the Financial Aids Office in Room 101 of the Wales Building or the Registrar's Office in Room 206 of Wales Building for a copy of the guidelines.

PACKAGING POLICY

At Broome Community College the self-help concept of financial aid packaging is used. Eligible students are funded, on a need basis and a first-come, first-served order.

The Pell Grant and the New York State Tuition Assistance Program (TAP) represent the floor of the package followed by any employment, loans and grants available.

This kind of financial aid packaging ensures that any student who wishes to attend a postsecondary institution will have the opportunity to obtain the needed funding.

An example of the self-help concept:

- (1) Total Student Costs (Budget)
- (2) Subtract Resources:
 - a) Parental Contribution
 - b) Student Summer Savings (\$700 or \$900)
 - c) Students Assets
 - d) Other Resources

Initial Financial Need

- (3) Subtract:
 - a) Tuition Assistance Program (TAP) Grant or Estimate
 - b) Pell GrantUnmet Need for Campus-Based Aid
- (4) Subtract:
 - a) Educational Opportunity Program (EOP)
 - b) National Direct Student Loan (NDSL)
 - c) College Work Study
 - d) Supplemental Educational Opportunity Grant (SEOG)
 - e) BCC—Grant in Aid
 - f) National Nursing Loan
 - g) National Nursing Scholarship\$400 unmet need*

*Most students are able to satisfy their unmet need through the Guaranteed Student Loan Program. The amount of unmet need may vary from year to year

RIGHTS AND RESPONSIBILITIES OF FINANCIAL AID RECIPIENTS

Student recipients of financial aid are the beneficiaries of money made available by a variety of agencies—federal, state, institutional, and/or private. The act of accepting a financial aid award signifies that the recipient knows about, understands, and is willing to comply with both the rights and the responsibilities involved with that award. Thus, it is the recipient's **RIGHT TO KNOW**:

- 1—What federal, state and institutional financial aid programs are available.
- 2—The deadlines for submitting application forms for each assistance program.
- 3—The cost of attending the College and the refund policy.
- 4—The criteria used by the College to select financial aid recipients and how the school determines financial need.
- 5—What resources (such as parental contribution) are considered in the calculation of financial need and how much of that need, as determined by the College, has been or will be met, and how (loan, grant and/or work-study).
- 6—How much of the financial aid will have to be repaid, and what portion is a grant (gift-aid). If the aid is a loan, the recipient should know what the interest rate is, the total amount that must be repaid, the payback procedures, the length of time allowed to repay the loan and when repayment is to begin.
- 7—How the College determines whether the student-recipient is making satisfactory progress and what happens if not.



It is the recipient's **RESPONSIBILITY** to:

- 1—Know and understand fully the financial aid program and one's specific financial aid package before signing the forms.
- 2—Make sure that all application forms are completed accurately and submitted, on time, to the right place.
- 3—Pay special attention to and accurately complete the application for student financial aid. Errors can result in long delays in the receipt of financial aid. Intentional misreporting of information on application forms for federal financial aid is a violation of law and is considered a criminal offense subject to penalties under the U.S. Criminal Code.
- 4—Return any and all additional documentation, verification, correction, and/or new information requested by either the Financial Aid Office or the agency to which the application is submitted.
- 5—Read and understand all forms that one signs and keep copies of them.
- 6—Accept responsibility for all agreements signed.
- 7—Notify the lender of changes in name, address or school status, if one has a loan.
- 8—Perform the work that is agreed upon in accepting a College Work-Study award.
- 9—Know and comply with the deadlines for application and/or reapplication for aid.
- 10—Know and comply with the school's refund procedures.

GRANTS

NOTE — The following financial aid information is current as of spring 1983. Due to the nature of financial aid programs, some of this information may be changed during the academic year. Please contact the Financial Aid office for updated information.

ELIGIBILITY	AMOUNT PER YEAR	WHERE/HOW TO APPLY
Tuition Assistance Program (TAP)		
Full-time students at any accredited college in New York State. Resident of New York State. No academic requirement.	\$250 to \$2200, not to exceed tuition. Based on income.	New York State Higher Educational Services Corp. Tower Building Empire State Plaza Albany, NY 12230 Forms available in BCC Financial Aid Office.
Regents College Scholarship (Scholarships for nursing students and children of deceased or disabled veterans also available)		
Based on SAT or ACT test scores. For full-time students at any accredited college in New York State who are New York State residents.	Minimum of \$250. Depending on income and class level, a TAP award may also be received that could combine with the \$250 to equal the tuition charge.	New York State Higher Educational Services Corp. Tower Building Empire State Plaza Albany, NY 12230
Basic (Pell) Grant Program		
Accepted or enrolled full-time or half-time students who demonstrate financial need.	From \$128 to \$1800. Cannot exceed one-half the cost of college expenses.	Forms available in BCC Financial Aid Office and in high school guidance counselor offices after Jan. 1.
Supplemental Educational Opportunity Grant		
For full-time or half-time students with demonstrated high financial need. On first-come, first-served basis.	Up to \$2000 depending upon need and cost of college expenses.	Student must submit a Financial Aid Form and an Application for Financial Aid. Forms available in BCC Financial Aid Office and in high school guidance offices.
Nursing Scholarship		
For full-time or half-time nursing students with exceptional financial need. Awarded on a first-come first-served basis.	Up to \$2000 depending on need.	Student must submit Parent's Confidential Statement or Financial Aid Form and an Application for Financial Aid. Forms available in BCC Financial Aid Office.
BCC Foundation Grant		
Full-time or part-time students with financial need.	Varies according to individual need.	Submit Financial Aid Form and an Application for Financial Aid. Forms available in BCC Financial Aid Office.
Educational Opportunity Program		
Full-time and part-time students with financial need and less than an 82 high school average. Family income must be below a specific level.	Varies according to individual need. Average of \$250 per student per academic year.	Application available in the Educational Opportunity Program Office at BCC in Library.

LOANS

ELIGIBILITY

AMOUNT PER YEAR

WHERE/HOW TO APPLY

New York State Higher Education Services Corporation Loan

For full-time or part-time students. Student borrows on own signature from a participating bank. If family income is greater than \$30,000 a year, student must show financial need.

Maximum of \$2500 per academic year. No interest while in school. Repayment and 9% interest begin 6 months after leaving school. Up to 10 years to repay. Insurance premium of 1/2 of 1% and a 5% origination fee are deducted from borrowed amount.

Most banks in New York State or New York State Higher Education Services Corporation, 50 Wolf Road, Albany, NY 12205. Forms available at local banks.

National Direct Student Loan

For full-time or part-time students with financial need. Student borrows from the college on own signature. Awarded on a first-come, first-served basis.

Amount varies according to student's need. Total of \$6,000 for an undergraduate program, but no more than \$3,000 total for the first two years of college study. No interest while in school. Repayment at 5% interest begins 6 months after leaving school. Up to 10 years to repay.

Student must submit Financial Aid Form and an Application for Financial Aid. Forms available in BCC Financial Aid Office.

Nursing Student Loan

For full-time or part-time nursing students with financial need. Student borrows from the college on own signature. Awarded on a first-come, first-served basis.

\$2500 maximum per year not to exceed an aggregate of \$10,000. No interest while in school. Repayment and 6% interest begin 9 months after leaving school. Up to 10 years to repay.

Student must submit Financial Aid Form and an Application for Financial Aid. Forms available in BCC Financial Aid Office.

Parent Loan for Undergraduate Students (PLUS)

Loan program for parents of dependent undergraduate students. Maximum \$3,000 per year per student. Total loan limit of \$15,000 per student. Repayment begins 60 days after disbursement. 12% interest rate, though interest can fluctuate.

Pauline Parker Loan

For full-time students who are Broome County residents, under 25 years of age, and in financial need.

\$1000 maximum per year. No interest charge.

Forms available in BCC Financial Aid Office.

Emergency Loans

For full-time or part-time students, through the support of the BCC Foundation. Available in emergency situations only.

\$150 maximum. No interest charge. Repayment in 30 days.

Forms available in BCC Financial Aid Office.

EMPLOYMENT

College Work-Study

For full-time or part-time students with financial need. Awarded on a first-come, first-served basis.

Students may work up to 20 hours a week when classes are in session or up to 37½ hours a week during vacations. Wage: Minimum.

Student must submit Financial Aid Form and an Application for Financial Aid. Forms available in BCC Financial Aid Office.

Expenses

TUITION

Tuition and fees are payable at the Student Account Office according to a payment schedule released by the College for each semester. The responsibility for payment rests upon the student, who will be billed prior to the start of each semester. Both full-time and part-time students who have registered for courses will be "de-registered" if they fail to meet the established due dates for tuition fee payment.

STUDENTS CARRYING 12 OR MORE CREDIT HOURS —considered full-time students.

For New York State residents	
With residency certificate	\$425 per semester
Without residency certificate	\$850 per semester
For out-of-state residents	\$850 per semester

Students admitted to the College prior to August 1 will be billed for a \$50 tuition deposit. This payment will be applied toward the Fall Semester tuition bill for those students who register. Students who do not register for the Fall Semester can obtain a refund of the tuition deposit, through the end of the first week of classes, by submitting a request in writing to the College Controller. At the end of the first week of classes, the tuition deposit is non-refundable.

STUDENTS CARRYING FEWER THAN 12 CREDIT HOURS —considered part-time students.

For New York State residents	
With residency certificate	\$34 per credit hour
Without residency certificate	\$68 per credit hour
For out-of-state residents	\$68 per credit hour

Many students may qualify for financial aid, some of which is applicable toward tuition. **See Financial Aid section on pages 8 through 11.**

SEE TUITION REFUND POLICY ON PAGE 13.

RESIDENCY CERTIFICATE

To qualify for the resident tuition fee, a student is required by law to present once each academic year on or before registration a residency certificate indicating that he or she has been a legal resident of the State of New York for one year and of a county for six months.

Broome County Residents—Full-time students admitted to the College will be mailed a copy of the application for residency certificate prior to registration. This application must be completed and presented at the time of tuition payment.

Out-of-County Residents—Full-time students admitted to the College will be mailed a copy of the application for residency certificate prior to registration. The application must be completed, notarized and presented to the **County Treasurer of the County in which the student resides.** The County Treasurer will then issue a residency certificate to the student. This residency certificate must be presented at the time of tuition payment.

Part-Time Students must meet the same requirements as stated above. The application for residency certificate form is available at the Student Account Office and the Office of Continuing Education.

The completed residency forms are required once each academic year.

Failure to comply with this requirement will result in paying double tuition, not to exceed the limitations cited above.

Books, Supplies, Uniforms And Other Student Expenses

Students provide at their own expense the necessary books and instructional materials. These may be purchased at the College Book Store maintained by the Faculty-Student Association for the convenience of the students. The cost varies, depending on the curriculum, from about \$200 to \$400.

In the Health Science curriculums students will provide, at their own expense, their own transportation to off-campus locations for necessary clinical and other experience.

In addition, some curriculums require uniforms. Among these are Nursing, Radiologic Technology, Medical Laboratory Technology and Medical Assistant. Gym clothes are necessary for physical education classes. Dental instruments and pants-type uniforms are prescribed for Dental Hygiene students.

The following expenses are in addition to the usual cost of about \$200 per year for books and are included in financial aid allowance for students enrolled in these programs:

	Freshman	Senior
Chemical Technology	\$60	\$60
Civil Technology	50	95
Dental Hygiene	300	255
Electrical Technology	200	75
Mechanical Technology	40	40
Medical Assistant	75	75
Medical Lab Technology	100	0
Nursing	85	50
Radiologic Technology	375	425
Secretarial	50	70

FEES
Student Fees

STUDENT ACTIVITY

Table with 2 columns: Student Activity, Fee. Rows include Full-Time Student (\$25 per semester), Part-Time Day Student (2 per semester), and Part-Time Evening Student (1 per semester).

The activity fee entitles full-time day students to admission to varsity games, dances and parties, as well as a subscription to the student newspaper and the opportunity to participate in a varied program of co-curricular activities, including intramural athletics.

The Student Activity Fee is budgeted and administered by the Student Government with the approval of the College Administration and in recent years has been apportioned to the following activities:

- Campus publications
Newspaper, Yearbook
Program Board
Speakers, Performers, Dances, Movies, Picnics,
Special On and Off-Campus
Programming
Club Council
27 funded clubs including most curriculum organizations
Athletics
11 male and female intercollegiate teams, coaching stipends, intramurals, administrative expenses
United Student Government
Administrative expenses, vehicle maintenance, class gift, audit, supplies

Part-time day students (those taking fewer than 12 credit hours) pay a \$2 student activity fee per semester. This entitles them to admission to convocations and to issues of the Fulcrum, the student newspaper. It does not include, however, admission to varsity sports events or membership in student organizations or to copies of The Citadel, the student yearbook. The student has the option though of paying \$25 per semester and receiving the same privileges as full-time day students. Part-time evening students pay a \$1 student activity fee per semester.

SEE FEE REFUND POLICY IN COLUMN 3 ON THIS PAGE.

ACCIDENT INSURANCE, HEALTH SERVICE FEE

Table with 2 columns: Insurance Type, Fee. Rows include Full-Time Student Accident Insurance (\$7 per year), Health Service Fee, Full-Time Students (\$3 per semester), and Part-Time Day Students (\$1 per semester).

Money collected from the Health Service fee is used for physician services, drugs, supplies, educational material, diagnostic equipment, special health programs and related Health Service expenses. The fee is non-refundable if the student withdraws from the College.

The accident policy covers the student for 12 months commencing the first day of classes for expenses incurred as a result of any accident, on or off campus. Maximum coverage is \$1000 per accident. Claim forms are available in the Health Service during the year, and must be filed with the Health Service before expenses will be paid. Students who withdraw and wish a refund of their accident policy must apply directly to the insurance company.

International Student Health Insurance

International students must show that they have health insurance coverage before they may enroll at the College. They must either purchase their own health insurance or that which is available through the College for \$87 per semester. Claim forms are available in the Health Service during the year. Students who withdraw and wish a refund of their health insurance fee must apply directly to the insurance company. Note that the "Health Insurance" mentioned in this paragraph is different from the "Health Service Fee" in the first paragraph above.

MEDICAL INSURANCE

The College does not provide medical insurance, but it is available through a number of insurance companies including Blue Cross/Blue Shield.

GRADUATION/DIPLOMA FEES

Table with 2 columns: Graduation Type, Fee. Rows include Graduation (\$18), Diploma (part-time evening only) (8), and Certificate (part-time evening only) (8).

Paid during semester preceding graduation and is refundable if the student does not graduate or earn diploma or certificate.

ALUMNI LIFETIME MEMBERSHIP \$20

Membership in the Broome Community College Alumni Association is optional. The lifetime dues are payable during the semester preceding graduation, and they entitle graduates to complete Association benefits. An increase to \$25 was being considered when this Catalog was prepared.

College Fees

NOTE—Some modifications in the college fee structure were under consideration when this Catalog was being prepared. There may be some changes for the Fall 1983 semester.

Table with 2 columns: Fee Type, Amount. Rows include Application Fee (\$10), Late Registration (10), Transcript Fee (1), Returned Check Fee (5), Credit by Examination (Non-Laboratory Course 25, Laboratory Course Maximum 65), Credit by Evaluation (*50 plus), Chemistry Laboratory Fee (\$5 per semester), and a note about all students taking chemistry laboratory courses with 200 numbers (\$5 per student).

Refund Policies, Procedures

TUITION REFUND POLICY
Fall and Spring Semesters

Students who officially withdraw from classes during the first three weeks of a semester will be entitled to tuition refunds on the following basis—100% refund during the first week, 50% during the second week and 25% during the third week. After three weeks of classes there will be no refunds. See College Calendar on page 136 for additional information on dates for tuition refunds.

Summer Session

Students who withdraw from Summer Session classes will be entitled to a 100% refund during the first week of the term. After that, there will be no refunds.

FEE REFUND POLICY

The student activity fee is refundable according to the same schedule as tuition. See "Tuition Refund Policy" above.

REFUND PROCEDURE

An application for refund of tuition and fees must be made in person and in writing in the Registrar's Office (W-206). The application must be on the College form provided. The date on which the application is filed is considered the official date of the student's withdrawal and any refund to which the student may be entitled is computed using that date.

Academic Affairs

REQUIREMENTS FOR GRADUATION

COMMON REQUIREMENTS FOR ALL FOUR DEGREES GRANTED BY THE COLLEGE

1. Successful completion of all courses for the degree as contained in this Catalog.
2. A 2.00 cumulative GRADE POINT AVERAGE in those courses applicable to the degree.
3. Recommendation of the faculty for the awarding of the degree.
4. Satisfaction of all obligations to the College.

THE ASSOCIATE IN APPLIED SCIENCE DEGREE (AAS)

This degree is awarded to graduates of curriculums in these fields of study:

Accounting	Fire Protection Technology
Automotive Service Specialist	Individual Studies
Chemical Engineering Technology	Industrial Safety and Occupational Hygiene
Child Care	Industrial Technology
Civil Engineering Technology	Marketing Management and Sales
Criminal Justice—Police	Mechanical Engineering Technology
Data Processing	Medical Assistant
Data Processing—Technical	*Medical Laboratory Technology
Dental Hygiene	*Medical Record Technology
Electrical Engineering Technology	Nursing
Engineering (Industrial) Secretarial	Office Services Assistant
Executive Secretarial	Paralegal Assistant
	*Radiologic Technology

5. Curriculum Requirements
 - a. The minimum number of credits in a student's major field as determined by each academic department. These are courses intrinsic to and required by the various curriculums.
 - b. A minimum of 20 credits in Liberal Arts and Sciences courses will include:
 - 1) Social Sciences: a minimum of 6 credits
 - 2) Natural and Physical Sciences (including mathematics): a minimum of 6 credits
 - 3) Humanities: a minimum of 6 credits in English (may include a maximum of 3 hours in speech)
 - c. Satisfactory completion of all courses in a curriculum or as approved in a department.
 - *d. Summer clinical experience required for graduation in curriculums noted.

THE ASSOCIATE IN SCIENCE DEGREE (AS)

This degree is awarded to graduates of the Business Administration, Computer Science, Engineering Science and Individual Studies curriculums and the Science Option in Liberal Arts and Sciences.

5. Curriculum requirements:
 - a. At least 30 credits in the humanities, natural sciences, mathematics, the social sciences.
 - b. Physical Education—2 credits (for Liberal Arts, Computer Science and Engineering Science students only).



THE ASSOCIATE IN ARTS DEGREE (AA)

This degree is awarded to graduates in the Liberal Arts and Sciences curriculum.

5. Liberal Arts and Sciences requirements distributed as follows:
 - a. English: a minimum of 12 credits, of which 6 shall be in composition and 6 in literature.
 - b. History: a minimum of 6 credits in approved courses.
 - c. Humanities: a minimum of 6 credits (6 in philosophy or 6 in a foreign language).
 - d. Mathematics: Students who have completed fewer than 3 units of secondary school mathematics (through 11th year math) are required to take 2 semesters of college level mathematics. . . Students who have completed 3 units of secondary school mathematics (through 11th year math) are required to take one semester of college level mathematics. . . Students who have completed more than 3 units of secondary school mathematics (including 11th year math) are not required to take additional mathematics. They may, however, elect an appropriate math course or an elective in another field.
 - e. Natural and Physical Sciences: a minimum of 8 credits.
 - f. Social Sciences: a minimum of 6 credits.
 - g. Electives: 16 credits minimum. A maximum of 12 credits may be taken outside the offerings in Liberal Arts and Sciences with the approval of the dean of the division.
 - h. Physical Education: 2 credits. Exceptions to this requirement may be made by the dean of Liberal Arts for valid reasons.
 - i. Satisfactory completion of all courses in a curriculum or as approved in a department.

THE ASSOCIATE IN OCCUPATIONAL STUDIES DEGREE (AOS)

This degree is awarded to graduates of the Tool and Die Making curriculum and requires a minimum of 64 semester credit hours.

5. There are no specific requirements to take particular numbers of credit in general education courses for the AOS degree.

CREDIT BY EVALUATION

Non-Traditional Study

Broome Community College acknowledges that it is necessary and worthwhile to provide methods for considering various non-traditional activities for credit. By documenting and demonstrating that learning has taken place through various prior experiences, students may be awarded academic credit. Various examinations may also be taken for credit.

The Dean of Curriculum is the initial contact point for students interested in obtaining more information about non-traditional study, examination programs, and their suitability for various student purposes. Students will be assisted in determining whether or not such study or examinations would be worth pursuing for their educational objectives. The appropriate academic department is responsible for integrating any credit achieved in this manner into the student's academic program.

Advanced Placement Examination (AP)

The College will recognize for credit the AP examinations of the College Entrance Examination Board. A score of 3 or above is acceptable for credit upon departmental approval. Laboratory courses may require additional lab work for full credit for a college course. Credit awarded will be handled as transfer credit.

College Proficiency Exams (CP)

The CP exams of the University of the State of New York will be recognized for credit upon approval by the appropriate department. Credit awarded will be handled as transfer credit.

College Level Examination Program (CLEP)

The College will recognize successful achievement at or above the 50th percentile on CLEP exams in accordance with SUNY and American Council of Education guidelines. Approval of credit for degree requirements or electives is determined by the appropriate department. Credit approval will be handled as transfer credit.

BCC Credit By Examination (CBE)

The College in many instances provides for full or part-time BCC students credit by examination for knowledge gained outside the traditional classroom situation. This is strictly for use at BCC. Guidelines for this procedure are available from the College's department chairpersons. There will be a fee charged for the exam. If a student receives an F grade after normal completion of a course, no credit by examination is given in that subject.

Portfolio Assessment (Special Individual Assessment)

The College will evaluate for credit various types of learning acquired outside the usual classroom environment and a fee is required, based on credit hours requested. Particular criteria for awarding credit may be applied by an academic department. Approval of credit is the responsibility of the appropriate department. Students must identify what has been learned. Contact the Dean of Curriculum for additional information.

Special Assessment of Group Sponsored Learning

The College will evaluate for credit various types of learning acquired through participation in learning experiences or training provided by businesses, industry, unions, professional societies, governmental agencies or the military. Particular criteria for awarding credit may be applied by an academic department, and approval of credit is the responsibility of the department. Contact the Dean of Curriculum for additional information.

DEGREE PROGRAMS

Graduates of Broome Community College receive associate degrees, and the courses of study fall into six general categories—engineering and engineering technology, business, computer studies, liberal arts, health sciences and a cluster of others. Liberal arts courses are included in all curriculums, as it is believed that students need more than technical competence to understand people and their daily working and personal inter-relationships.

Applicants to the College should consider carefully the type of program they wish to pursue, for the nature of the offerings makes it difficult for a student to switch from one curriculum to another after commencing studies.

Engineering and Engineering Technology

In the area of technical education, the College offers seven programs. One, Engineering Science, is in effect the first two years of an engineering curriculum, and students who do satisfactory work in it should experience little difficulty in transferring to engineering colleges at the third-year level.

Four others are designed to train engineering technicians in the fields of Chemical Engineering Technology, Civil Engineering Technology, Electrical Engineering Technology and Mechanical Engineering Technology. Students in these programs are prepared for employment in various types of technical work immediately after graduation.

In addition, the College offers two programs for part-time students in the evening. These are Industrial Technology, which has six major areas of study to choose from, and Fire Protection Technology.

Business

The Business curriculums are designed primarily to prepare graduates for immediate employment in one of five fields—Accounting, Marketing Management and Sales, Engineering Secretarial, Executive Secretarial and Office Services Assistant. In addition, there is a sixth option, Business Administration, that combines more university parallel preparation with a minimum of job-oriented courses. This program is intended for the person who plans to continue his/her college education for a baccalaureate degree, even though he/she may want to work for a while before transferring to a four-year college.

It is possible to transfer from all programs. But because each student's transfer credits are evaluated by the four-year institution, the number of credits accepted can vary.

Computer Studies

The Computer Studies Department at Broome Community College offers four degree programs in the computer field—Computer Science, Data Processing, Data Processing Technical, Industrial Technology with Computer Emphasis. The latter is for evening part-time students. The Computer Science program leads to the Associate in Science degree while graduates of the other three receive the Associate in Applied Science degree.

Liberal Arts and Sciences

University parallel curriculums in Arts and Sciences prepare students for transfer to four-year colleges or universities. While the aim of liberal learning is to broaden human perspective and deepen understanding through study of philosophy, history, literature and the arts, students who identify career/professional goals early can begin to develop appropriate academic concentrations. Liberal Arts and Sciences also offers degree programs for those seeking immediate employment. Please refer to the Career Models on pages 46 and 47 in this catalog.

Health Sciences

Opportunities for men and women interested in the health sciences field are provided in six areas—Dental Hygiene, Medical Assistant, Medical Record Technology, Nursing, Medical Laboratory Technology and Radiologic Technology. Graduates are prepared to work immediately after graduation in physicians' or dentists' offices, laboratories or hospitals.

Graduates of these programs are also qualified to take whatever licensing examinations their professions require.

Others

The College offers degree opportunities in five other academic areas—Child Care, Criminal Justice, Individual Studies, Industrial Safety and Occupational Hygiene and Paralegal Assistant. All lead to the Associate in Applied Science degree, and Individual Studies students may earn either that degree or the Associate in Science, depending on their program of study. All are conducted under the Special Career Programs Department, along with a Paralegal Assistant Diploma program and a Dietetic Assistant Certificate program. The College also has a Tool and Die Making curriculum that leads to the Associate in Occupational Studies degree.

DIPLOMA, CERTIFICATE PROGRAMS

Broome Community College also has diploma and certificate programs which are less than two years in length, have more specific objectives than the associate degree offerings, and consist of about one year of college credit. Some are designed to prepare students for jobs that require specialized higher education, but not necessarily a college degree; some provide students with an opportunity to upgrade their academic backgrounds or expand their qualifications for a particular field of study; and some offer college credits and additional training to people already working in the field.

Most of the diploma and certificate offerings carry college credits, and they can lead a person into some of Broome Community College's degree-granting curriculums. They can be taken on a full-time or part-time basis, and most of them are offered in the evening although some are available through day classes. No specific high school courses are required for enrollment.

Further details, a listing of courses and literature about most of these diploma and certificate programs are available in Room 111 of Wales Building.

Diploma Programs

Business Emphases
 Accounting
 Management
 Marketing/Sales/Retailing
 Child Care
 Criminal Justice
 Fire Protection Technology
 Industrial Technology Emphases
 Chemical
 Civil
 Computer Studies
 Electrical
 Industrial Safety and Occupational Hygiene
 Mechanical
 Production Management
 Liberal Arts
 Paralegal Assistant

Certificate Programs

Dietetic Assistant
 General Office
 Interior Design
 Machinist Related Instruction

Broome Community College has direct transfer agreements with a number of four-year colleges to facilitate the acceptance of BCC graduates into the third year of study. The number of colleges with which BCC has such agreements is increasing each year. Further details are available in the Counseling and Student Development Center (Wales Building, Room 200).

With SUNY Binghamton Transfer Agreement

All Broome Community College students who have graduated or who will graduate with an AA or AS degree with a grade point average of at least 3.0 will be admitted, upon application, as matriculated students in Harpur College of SUNY at Binghamton. Those students graduating with the above degrees but with a grade point average between 2.6 and 3.0 are usually admitted. Others, including those with an AAS degree, should contact the SUNY at Binghamton Office of Admissions. Admitted students will be granted junior-year standing upon presentation of 56 or more transferable credits.

Cross-Registration

BCC students may cross-register at Binghamton for one course each semester. The courses for which they cross-register must be courses that are not available at Broome Community College. No additional tuition is necessary. Additional information is available in the Registrar's Office in the Wales Building, Room 206.

Joint Degree

The joint-degree program enables students in SUNY at Binghamton's Bachelor of Arts degree program to simultaneously earn an Associate in Applied Science degree at BCC.

Additional information on these programs is available in the office of the Dean of Academic Services (Wales Building, Room 202).

COOPERATIVE PROGRAMS WITH OTHER COLLEGES

With College of Environmental Science and Forestry (SUNY)

Pre-Environmental Science and Forestry

This program is designed for those students who ultimately desire a B.S. degree in the environmental sciences and/or forestry from the SUNY College of Environmental Science and Forestry (ESF), which is an upper division/graduate center.

After the first two years of study at Broome Community College, transfers to ESF may apply to a variety of programs at Syracuse which include the **biological sciences** (botany and forest pathology, entomology, zoology, wildlife biology, silvics, pest management); **chemistry** (natural and synthetic polymers, biochemistry and natural products, environmental); **forest engineering, paper science and engineering; wood products engineering; and forestry** (resource management, forest resource science, management science, environmental education and communications, urban forestry, world forestry, applied resource management). The program in **landscape architecture** leads to a B.S. degree in environmental studies and, after one additional year, a Bachelor of Landscape Architecture degree.

Persons planning to transfer should follow the program requirements in consultation with BCC's Pre-Environmental Science and Forestry campus advisor for selection of electives which vary according to the curriculum at ESF.

Successful graduates of Broome Community College's Pre-Environmental Science and Forestry Program generally gain admission to the SUNY College of Environmental Science and Forestry with full junior class status.

Contact campus advisor for specific course requirement: Roger McVannan, Room T-108.

With Keystone Junior College

BCC students may also cross-register at Keystone Junior College in LaPlume, Pa. for one course each semester. The courses for which they cross-register must be ones that are not available at Broome Community College, and they can take them without paying additional tuition. Additional information is available in the office of the Dean of Academic Services (Wales Building, Room 202).

Guaranteed Transfer Program with State University of New York

Students who graduate from Broome Community College with Associate in Arts or Associate in Science degrees are guaranteed admission, at the third-year level, to a four-year college of the State University of New York. This guarantee has some limitations and details are available in the Counseling and Student Development Center (Wales Building, Room 200).

One-Plus-One Programs

Broome Community College has One-Plus-One Programs with other two-year colleges to enable a student to attend BCC for one year and then transfer to the other college for the second year for the Associate in Applied Science degree. This program permits students to begin studying at BCC for a degree in a field not offered at this College. By taking the BCC courses that one needs for the particular degree involved, residents of Broome County can enjoy the advantages of living at home during one year of their college attendance. Students taking these One-Plus-One Programs are liberal arts students at Broome Community College because most of the courses they take at BCC are liberal arts courses.

Listed below are colleges which offer transfer opportunities for students who have completed the appropriate one year of study at Broome Community College. Roger McVannan is the academic advisor for most of these programs, and he should be contacted for more information about them, except where another academic advisor's name is listed.

Delhi Agricultural and Technical College

Hotel Restaurant Technology
Construction Technology (Stephen Steele)
Architectural Technology (Stephen Steele)
General Agriculture
Animal Husbandry-Dairy

Paul Smith's College

Hotel and Restaurant Program

Two-Plus-Two Programs

In addition to the one-plus-one programs, Broome Community College also has cooperative arrangements with four-year colleges. These cooperative arrangements allow students to take the first two years of a four-year degree at Broome Community College and then complete studies for the baccalaureate degree at the particular four-year college, usually in two additional years.

Colleges listed below have cooperative arrangements with Broome Community College in the areas of study indicated. Contact the Admissions Office at Broome and/or the appropriate department chairperson for specific information on course requirements. In addition, many of the four-year colleges require specific grade point averages to be eligible for transfer.

College of St. Rose
All AA, AS degrees

Cornell University (College of Human Ecology)
Nutritional Sciences
Human Development and Family Studies
Human Service Studies Social Work Option

Farleigh Dickinson University
AAS Degree in Civil, Electrical, Mechanical
Engineering Technology

Hofstra University
Full transfer for all AA and AS in Liberal
Arts, Business Administration and Engineering
Science

LeMoyne College
Any baccalaureate degree program with AA or AS in
Liberal Arts and Sciences, Business Administration,
Engineering Science

Marist College
Parallel programs in Business (Marketing
Management) Accounting, Engineering
Technology, (Civil, Electrical, Industrial and
Mechanical)

St. John Fisher College
AA, AS degree programs, Liberal Arts and Sciences,
Business Administration, Engineering Science

Rochester Institute of Technology
AA, AS, AAS degree

SUNY College at Cortland
Elementary Education, Computer Science

SUNY College at Fredonia
Any baccalaureate degree program in Liberal Arts
and Sciences, Business Administration,
Engineering Science, Radio and Television with
recommended course sequences

SUNY College at Oneonta
AAS in Accounting, Marketing Management and
Sales, Data Processing, and AS in Computer Science

SUNY College at Oswego
Business Administration

SUNY College at Purchase
AA, AS degree programs in Liberal Arts and Sciences

Syracuse University
School of Management

Trinity College
AA, AS or AAS degrees, concentrates on Liberal
Arts, Sciences, Business Administration, Engineering
Science

SUNY Upstate Medical Center
Cytotechnology, Medical Technology,
Physical Therapy

Utica College of Syracuse University
AA, AS graduates in following concentrations—
Liberal Arts and Sciences, Business Administration
Engineering Science

Waynesburg College
Associate degree graduates accepted, transfer
credit determined on individual basis

PROGRAM IDENTIFYING NUMBERS

State regulations require a listing of all curriculums, together with the degrees they lead to and their HEGIS code numbers. HEGIS stands for Higher Education General Information Survey, and the HEGIS numbers for each curriculum are official federal and state designations.

HEGIS Code	Degree	Curriculum
0506	AS	BUS—Business Administration
0901	AS	Engineering Science
4901	AAS	Individual Studies
4901	AS	Individual Studies
4901	DIPLO	Liberal Arts
4901	AA	Liberal Arts & Sciences
4901	AS	Liberal Arts & Sciences
5001	DIPLO	Business
5002	AAS	BUS—Accounting
5004	AAS	BUS-Marketing Management & Sales
5005	AAS	BUS-Secretarial Sciences, Office Services Assistant
5005	AAS	BUS-Secretarial Sciences Industrial
5005	AAS	BUS-Secretarial Sciences, Executive
5005	CERT	General Office
5012	CERT	Interior Design
5099	CERT	Paralegal Assistant
5099	AAS	Paralegal Assistant
5101	AS	Computer Science
5101	AAS	Data Processing
5101	AAS	Data Processing-Technical
5203	AAS	Dental Hygiene
5205	AAS	Medical Laboratory Technology
5207	AAS	Radiologic Technology
5208	AAS	Nursing
5213	AAS	Medical Record Technology
5214	AAS	Medical Assistant
5305	AAS	Chemical Engineering Technology
5306	AAS	Automotive Service Specialist
5309	AAS	Civil Engineering Technology
5310	AAS	Electrical Engineering Technology
5312	DIPLO	Industrial Safety & Occupational Hygiene
5312	AAS	Industrial Technology-Industrial Safety & Occupational Hygiene
5312	DIPLO	Industrial Technology
5312	AAS	Industrial Technology
5312	CERT	Machinist Related Instruction
5312	AOS	Tool & Die Making
5315	AAS	Mechanical Engineering Technology
5404	CERT	Dietetic Assistant
5503	DIPLO	Child Care
5503	AAS	Child Care
5505	DIPLO	Criminal Justice
5505	AAS	Criminal Justice-Police
5507	DIPLO	Fire Protection Technology
5507	AAS	Fire Protection Technology



Students in the College's International Studies Program study in Europe and other places in the world.

INTERNATIONAL STUDIES PROGRAMS

Broome Community College is a founding member of the College Consortium for International Studies, a group of 90 colleges spreading geographically from Canada to Florida and from California to Maryland. This consortium, during the 1982-83 academic year, offered students about 65 overseas academic programs in 27 foreign locations.

The programs range from structured, formal courses at affiliated schools and institutions abroad, to service-learning and contract-independent study courses. Students may choose from short-term programs in January and during the summer to longer term, semester and year-long programs.

SEMESTER PROGRAMS

BCC provides formal, structured programs lasting for a semester, a year or two years, in England, Denmark, Egypt, Germany, Ghana, France, Ireland, Israel, Italy, Mexico, Spain and Switzerland. Students study a full semester program (usually 15 to 18 credits) that is arranged prior to their departure at affiliated schools, institutions, colleges or universities abroad.

The subject areas range from liberal arts courses to specialized programs, such as criminal justice, languages and human services. Costs of these programs vary greatly, with the emphasis on high quality programs at public institutions. The costs approximate those at U.S. public colleges. For the 1982-83 year, the cost of a full semester in the popular program in England was about \$2400. This includes full room and board, all tuition costs, round trip air transportation, and many extras.

Many BCC students will find their academic and personal lives enriched through a cultural experience difficult to match in a conventional two-year course of study in this country. BCC maintains close communication with consortium offices in New York, London and Jerusalem to facilitate the placement of students in qualified institutions abroad.

ADMISSION TO PROGRAMS

Admission to the College does not automatically insure admission to BCC's programs overseas; separate application must be made to the consortium. Students will be evaluated on their academic ability, motivation, maturity and potential adaptability to a foreign culture. In addition to BCC approval, interviews with personnel from affiliate consortium institutions may be required. All programs are available to students from any college or the general public. At least one-half of the participants last year were community residents who went on short-term programs on a non-credit basis.

JANUARY & SUMMER SHORT PROGRAMS

During each academic year BCC conducts a wide variety of short-term programs in January and in the summer months. Students at BCC who have been introduced to study abroad through these short-term programs, usually two to three weeks in length, often decide to study overseas for a semester or year.

The short-term courses have grown in scope, as well as in number. During recent intersessions, courses have been in London in Theater, Real Estate, Criminal Justice Seminar, Nursing Seminar, Social Welfare Seminar, Psychology Seminar. Students were also able to study Italian Culture and Art in Italy and Tropical Field Ecology in the Virgin Islands. Costs for these programs last year started at \$789 for the London courses. A full list of the January offerings is usually available by November.

The summer programs vary in length from two weeks to two months. Recent offerings have included Music and Art in Vienna, Antiquities of Ireland, Italian Culture and Language, History and Culture of Spain and North Africa, Discover China, and Anthropology Field School in Mexico. Costs in the summer programs are somewhat higher than those in January due to higher airline costs.

A special month-long program at the University of Madrid for local Spanish students and at the University of Caen for local French students. The cost of these programs was \$1,995 each for 1983, but most students are able to qualify for scholarships under a special grant from the Spanish or French governments. A full list of courses being offered during the summer is usually available in March.

CREDITS, TRANSCRIPTS AND TUITION

Students register at BCC and pay the appropriate tuition, which in many cases covers the instructional costs abroad. Students are monitored through consortium offices in London and Jerusalem, or through individual mentors. Upon the successful completion of the formal program or after fulfillment of the contract, students will receive a BCC transcript reflecting the grades achieved or the course equivalents or the work done through the contract, greatly facilitating transfer of credits to other American institutions.

All credits earned are Broome Community College credits, which allows students to use their financial aid packages for semester length programs.

Students may earn up to 18 credits per semester, leading to an associate degree. Credits for intersession/short-term programs range from one to six, depending on the time spent abroad and the instruction offered in the program.

For additional details about any of the above programs, students should contact the International Studies Program Office at Broome Community College in Titchener Hall (Phone 771-5094).

GRADING INFORMATION

Because this grading policy went into effect for the Fall Semester of 1979, grades earned by students at the College prior to that date will remain as recorded.

Honor Points Per		
Grades	Credit Hour	Explanation
A	4	Outstanding achievement of course objectives
B	3	Significant achievement
C	2	Satisfactory achievement
D	1	Minimal satisfactory achievement
F	0	Failure to meet course objectives or dropped after 10th week
S	—	Satisfactory (certain courses)
U	—	Unsatisfactory (certain courses)
W	—	Withdrawal from a course between the 4th and 10th weeks inclusive (See "W" Grade below)
I	—	Incomplete due to special circumstances (See "I" Grade below)
IP	—	"In Progress"—for courses in which student is permitted more than one semester to complete
AU	—	Audit—not to be recorded as a grade (See "Audit" below)
T	—	Transfer credit from an accredited college

"S", "U" and "IP" Grades

The S or U grade and IP grade will apply only to specific courses determined by the appropriate departments and approved by the Vice-President for Academic Affairs. Such courses will not affect the Grade Point Average (GPA).

"W" Grade

It is the student's responsibility to initiate action to receive a grade of W between the 4th and 10th weeks inclusive. If no action is taken before the 11th week and the course is dropped, an F (or U) will be entered on the transcript. For 7½ week courses, an F (or U) will be entered on the transcript if the course is dropped after the 5th week. For 5-week courses an F (or U) will be entered on the transcript if the course is dropped after the 3rd week.

"I" Incomplete Grade

A student who receives an I grade shall, within two weeks after the last class of that semester, contact his or her instructor to arrange for completion of unfinished work, in accordance with agreed upon time limits that are not to exceed one year. The instructor will then notify the registrar of the arrangements and, after the student has completed the work, of the subsequent grade to be assigned. If the student does not meet the time limit, the instructor shall direct the registrar to record the appropriate grade.

If the student does not contact the instructor during the two-week period at the end of the semester, the registrar shall record the appropriate grade as directed by the instructor.

Audit

The term "Audit" shall not be considered a grade but an "opportunity." For persons auditing a course, the letters AU will appear next to the course name on the transcript with a message statement explaining the meaning of the designation. No grade shall appear in the grade column on the transcript.

Students are encouraged to use the option of taking courses on an audit basis. Any student who completes a course by auditing will have AU recorded on his/her record in place of credit grades. He/she may not receive credit for it later, unless he/she re-registers in the course or challenges it according to the existing rules for credit-by-examination.

Students who register in a course for audit are expected to have the necessary prerequisites. In this respect students are encouraged to make full use of the College's counseling services, but the ultimate decision whether or not to enroll for audit shall be the student's responsibility. Consideration may be given to a student's request for transfer from credit to audit status or vice-versa. The end of the third week of classes is the deadline for such transfer.

Full-time students may audit courses with no additional charge, but they need approval of their department chairperson. **For part-time students**, the regular tuition schedule applies (\$34 per credit hour for New York State residents and \$68 per credit hour for out-of-state students). New York State residents who are **60 years of age or older** may audit courses without charge on a space available basis.

Mid-Term Grades

Only the D, I, F and U grades will be reported to students and their advisers at mid-term.

Repeating Courses

If a course is repeated, the higher grade will enter the grade point average. If a required course is failed, the department or the dean may allow the student to substitute an equivalent or similar course, rather than repeat the failed course. In such cases the higher grade will enter the grade point average.

Grade Point Average

Each grade carries a specified number of honor points—4 for an A, 3 for a B, 2 for a C, 1 for a D. To determine one's grade point average, multiply the number of honor points earned, according to the letter grade, by the number of credits for the course. Add these together and divide this sum by the total number of credits taken.

For purposes of graduation eligibility, only those courses required for the degree will be included in the calculation of the grade point average.

President's List and Dean's List

Full-time students who have a semester grade point average of 3.80 or better will be named to the President's List. Such students must successfully complete a minimum of 12 hours, and courses which use the S or U grade may not be among the 12 hours.

Full-time students with a semester grade point average between 3.50 and 3.79 inclusive will be named to the Dean's List. Such students must successfully complete a minimum of 12 hours, and courses which use the S or U grade may not be among the 12 hours.

Part-time students can earn a place on the President's or Dean's Lists by having the appropriate cumulative grade point average for their most recent semesters that include at least 12 credit hours.

Graduation with High Honors or Honors

Students who graduate with a cumulative grade point average of 3.80 or better will receive the distinction of graduating with "High Honors" and those who graduate with a cumulative grade point average between 3.50 and 3.79 inclusive will graduate "with Honors."

GRADING INFORMATION (Continued)

Academic Dismissal from the College and Satisfactory Academic Progress

A student is not making **satisfactory academic progress** and will be dismissed from the College for academic reasons, if he/she has:

- 12 or more credit hours of W grades before completing 24 credit hours
- a cumulative grade point average less than 1.25 after completing 24 or more credit hours
- a cumulative grade point average less than 1.5 after completing 42 or more credit hours.

Note—"Completing" in this context means a grade of A, B, C, D or F has been recorded.

A student who receives notification of his/her academic dismissal from the College and feels that

there are extenuating circumstances may submit a petition to his/her department chairperson to rescind this action. This petition must be initiated within 10 days of the student's notification of dismissal. Academic dismissal action will not be rescinded without the approval of the student's chairperson **and** the Vice President of Academic Affairs or designee.

A student who is academically dismissed from the College may take no more than 9 credit hours during the following semester (proportionally fewer credit hours in a session less than 15 weeks) or must wait until one semester has elapsed before being eligible for readmission.

If the student chooses to take 9 or fewer credits of course work following dismissal, the course work must be jointly selected by the dismissed student and the department chairperson of the prospective curriculum to which the student will seek admission or another appropriate academic official. This joint selection procedure is necessary to promote the student's future success.

Dismissal, Readmittance for Degree Programs

A student must demonstrate discernible progress toward the achievement of a degree in a given program of study. If a student fails one or more introductory courses in a major sequence, as determined by the department, he/she may be dismissed by the department* from that program of study—but not necessarily from the College.

To be considered for readmittance to the program, the student must submit an internal petition to the department, which shall determine acceptance or rejection. In the case of programs that have limited space for freshmen, the Admissions Office shall notify the student of his/her readmittance into the program and adjust accordingly the number of spaces available for new freshmen. A maximum of 10% of the total number of available spaces for freshmen in a program may be used for readmitted students.

This policy applies to the following seven programs—Dental Hygiene, Engineering Science, Medical Assistant, Medical Laboratory Technology, Medical Record Technology, Nursing, Radiologic Technology.

OTHER ACADEMIC PROCEDURES

Attendance Regulations

Attendance in all scheduled course activities is expected as part of each student's responsibility for his/her own education. The policy of the College is that the student's academic achievement will determine grades and not just the statistics of presence or absence.

Student Responsibility: Each student is responsible for any work missed regardless of reason for any absence in class.

Instructor Responsibility: Each instructor is responsible for relating the significance of attendance to the course's objectives and to inform the students of this significance in the first class meeting.

Department Responsibility: Within the spirit and framework of college policy, each department may develop its own guidelines to meet its needs. Such guidelines are subject to the approval of the vice-president for academic affairs.

Student Academic Appeal Procedure

Broome Community College has established a procedure to provide students an opportunity to appeal grades in any particular course(s) or academic dismissal. Copies of this Student Academic Appeal Procedure are available in the Office of the Dean of Curriculum (W-202), and the policy also appears in the Student Handbook.

Withdrawal from the College

Broome Community College has committed itself to a philosophy of providing whatever assistance is necessary to aid the student in completing his/her academic goals. Students are strongly encouraged to seek academic and personal counseling prior to any withdrawal.

Students who decide to withdraw from the College must complete the proper termination forms available in the Registrar's Office or Counseling Center. Failure to comply may cause the individual to lose any possible refund of fees.

The College reserves the right to administratively withdraw a student from course(s) for lack of attendance. The Registrar's Office coordinates this process.

Length of Curriculum

Most associate degree programs are designed to be completed in two years. The college year is divided into two semesters of 15 weeks each plus an evaluation week. Some students may choose or be required to take more than four semesters to earn their degrees. Radiologic Technology students and Medical Laboratory Technology students have special clinical laboratory experience in the summer of both their freshman and senior years.

Late Registration

An applicant may not register later than one week after the beginning of each semester except by permission of the Vice-President for Academic Affairs. A late fee will be charged.

Independent Study

Many academic departments of the College offer "Independent Study" courses which are arranged between an individual faculty member and a motivated student. The student has the responsibility to make appropriate arrangements with a faculty mentor and to secure the permission of the department chairperson before registering for independent study.

Independent Study courses are **not** intended to replace regular courses which the student was unable to schedule or which he/she did not complete. Rather, these courses provide an opportunity for the serious student who desires to expand his academic background beyond the scope and the depth usually found in a regular course. (See course description section for offerings.)

LEARNING SKILLS CENTER

Department Chairman, Steven Natale
1st floor, Cecil C. Tyrrell
Learning Resources Center
Telephone 771-5236

Students entering college may not have the appropriate preparation for the Associate Degree they seek—for example, when a person changes careers, returns to school after several years, or needs to upgrade particular academic skills.

BCC's Learning Skills Center is committed to helping students realize their goals, regardless of prior academic preparation. The Center has courses and activities available for students and works closely with the Admissions and Financial Aid Offices, The Counseling and Student Development Center and Educational Opportunity Program personnel to provide a supportive environment for learning.

DIAGNOSTIC TESTING—The Learning Skills Center administers three tests to every entering full-time student in reading, in writing and mathematics. Part-time students are also encouraged to take these tests.

COURSE PLACEMENT—The Learning Skills Center uses the information gained from these tests to recommend to each student courses which are most appropriate to his/her program of study. Every effort is made to place students in courses in which they can succeed.

DEVELOPMENTAL COURSES—The Center offers various developmental courses for those desiring skill improvement or review. Some of these carry credit. Students must pay close attention to catalog information pertaining to these courses and must consult their department chairperson or Learning Skills Center personnel about the acceptability of credit.

DROP-IN ASSISTANCE—Learning Skills Center specialists help students with short term academic difficulties, such as writing a term paper, reading a difficult textbook, or solving a complex math problem. The staff encourages students to drop in to the Center for this type of assistance.

TUTORING—When a student experiences more serious academic difficulty and is in danger of failing a course, he/she may apply to the Center for peer tutorial assistance.

Located in the Cecil C. Tyrrell Library, the Center is open from 8:30 a.m. to 4 p.m.; in addition, evening hours are posted each semester. Detailed brochures describing the various programs are available at the receptionist's desk in the Center.

Absence Due to Religious Beliefs

Section 224-a of the State Education Law reads:

1. No person shall be expelled from or be refused admission as a student to an institution of higher education for the reason that he is unable, because of his religious beliefs, to attend classes or to participate in any examination, study or work requirements on a particular day or days.

2. Any student in an institution of higher education who is unable, because of his religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements.

3. It shall be the responsibility of the faculty and of the administrative officials of each institution of higher education to make available to each student who is absent from school, because of his religious beliefs, an equivalent opportunity to make up any examination, study or work requirements which he may have missed because of such absence on any particular day or days. No fees of any kind shall be charged by the institution for making available to the said student such equivalent opportunity.

4. If classes, examinations, study or work requirements are held on Friday after 4 p.m. or on Saturday, similar or makeup classes, examinations, study or work requirements shall be made available on other

days, where it is possible and practicable to do so. No special fees shall be charged to the student for these classes, examinations, study or work requirements held on other days.

5. In effectuating the provisions of this section, it shall be the duty of the faculty and of the administrative officials of each institution of higher education to exercise the fullest measure of good faith. No adverse or prejudicial effects shall result to any student because of his availing himself of the provisions of this section.

6. Any student, who is aggrieved by the alleged failure of any faculty or administrative officials to comply in good faith with the provisions of this section, shall be entitled to maintain an action or proceeding in the supreme court of the county in which such institution of higher education is located for the enforcement of his rights under this section.

6-a. A copy of this section shall be published by each institution of higher education in the catalog of such institution containing the listing of available courses.

7. As used in this section, the term "institution of higher education" shall mean schools under the control of the Board of Trustees of the State University of New York or of the Board of Higher Education of the City of New York or any community college.

The Courses	Catalog Page	Title	Credit	Comment
ENG 100	93	Basic Language Skills	3	As advised: satisfies half the composition requirement
RDG 090	115	Reading Fundamentals	3	As advised
RDG 100	115	College Reading	3	As advised
RDG 110	115	Rapid Reading	1	Elective Credit
LRS 101	116	Study Management	.5	Elective Credit
LRS 102	116	Memory and Exams	.5	Elective Credit
LRS 103	116	Textbook Mastery	.5	Elective Credit
LRS 104	116	Listening and Notetaking	.5	Elective Credit
LRS 110	116	The Research Paper	1	Elective Credit
LRS 120	116	The Art of Thinking	1	Elective Credit
MAT 003	100	Basic Math Review	0	As advised
A,B,C				
CHM 102	77	Preparatory Chemistry	4	As advised
PHY 100	112	Preparatory Physics I	4	As advised
PHY 101	112	Preparatory Physics II	4	As advised
SAC	97	Human Development Courses	2-3	As advised

THE CECIL C. TYRRELL LEARNING RESOURCES CENTER

The Cecil C. Tyrrell Learning Resources Center provides a wide variety of learning resources. Housed in the center are the Library, the Audio Visual Department, the Mathematics Learning Center, the Writing Center, the Reading and Study Skills Center and an Engineering Sciences and Technologies Learning Center, as well as offices and classrooms.

A staff of professional, technical and clerical specialists offers the students a broad range of services designed to meet their academic needs. Typical library services include lending of materials, information services, access to other learning resource centers, interlibrary loan service, assistance in research techniques, and instruction in the use of materials and equipment. A coin operated photocopier is also available.

The Learning Resources Center's primary function is to support and supplement the academic programs of the college and to provide a center for serious study, research and learning. Students are encouraged to use its facilities, materials, and services fully, but properly. Requests for information services and assistance are welcomed by the staff.

The facilities have a capacity of nearly 900 users. Individual carrels, lounge furniture, multiple person tables and stools, and a limited number of small group study rooms is available. Audio-visual equipment including projectors, tape and record players, micro-film reader/printers, as well as more specialized machines, are located in the center for student use. Some typewriters are also available.

The Learning Resources Center was constructed in 1967-68 and named for the College's founding president in 1972, the year he retired after 26 years in the position. The building is an attractive and modern three-story structure, with more than 40,000 square feet of space devoted to its learning facilities.

The Learning Resources Center collections offer many different types of print and nonprint materials carefully selected to meet the academic needs of students at college level. The print collections consist of over 62,000 books, 550 current periodicals and backfiles, plus over 10,000 pamphlets.

More than 3,000 audio recordings, slides, filmstrips, maps, microfilms, multimedia kits, and other types of media add several thousand more items to the collection. An extensive file of college catalogs is maintained.

Most materials including magazines may be borrowed for use outside the center, although some restrictions

are placed on reference and reserve materials. The basic loan period for books is two weeks, and for magazines and audio visual materials, one week.

Some loan periods may be extended if requested before the date the materials are due back in the center and the items not in demand. Overdue fines are not charged as a rule, but the college reserves the right to do so with proper notification.

Library cards will be issued to students upon request, but are not required for borrowing materials. Proper identification is necessary, however. Failure to return borrowed materials promptly upon notice can result in withholding of grades, transcripts and other services.

Lost and damaged materials must be replaced or paid for at current replacement costs, and the borrower is responsible for all materials charged out on his/her card.

The center is open for full service during the following hours:

Fall and Spring Semesters

Monday—Thursday	8 am to 10 pm
Friday	8 am to 5 pm
Saturday	12 noon to 5 pm
Sunday	4 pm to 10 pm

Holiday and Intersession

Monday—Friday	8 am to 5 pm
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Summer Session

Monday, Wednesday, Thursday	8 am to 9 pm
Tuesday, Friday	8 am to 5 pm

(The center is closed, however, on all days that the College is officially closed).



OFFICE FOR THE DISABLED

Coordinator, Mary Schum
Learning Resources Center, Room 210, 2nd floor
Telephone 771-5128

In addition to regular student services on campus, disabled students entering college may receive special assistance. The Office for the Disabled provides these students additional help in achieving their educational goals.

Such services as interpreters, readers and notetakers are available, and adjustments for program accessibility like rescheduling classes and elevator use are also arranged. Through the Learning Resources Center and other departmental areas, students may obtain and use various aids as the Visualtek Machine, light magnifiers, tape recorders, projectors, large print reading materials, and taped books.

Federal Law prohibits pre-admission inquiries concerning disabilities. Therefore, it is strongly recommended that students complete a brief card regarding disabilities at orientation sessions or when coming to the campus in the fall. This voluntary self-identification is confidential but will enable the College to plan for student needs and provide better service.

—Counseling and Student Development Center—

The Counseling and Student Development Center provides many services for students, whether they are enrolled full-time or part-time, day or evening. Students can meet with counselors in a non-threatening and informal atmosphere, as they seek to develop their potential, form realistic goals, and understand themselves emotionally and intellectually. The Center is equipped to help students

1. Understand their basic needs in terms of social, vocational and emotional adjustment to the college setting.
2. Establish realistic educational goals and appropriate methods of achieving them.
3. Assess their strengths and weaknesses to enable them to more effectively deal with academic and personal problems.
4. Better understand their role and that of the College in the higher educational process.
5. Obtain information about transfer and career opportunities, as well as assistance in dealing with academic problems.
6. Grow in their personal development and determine appropriate values through instruction in human development courses.

The Counseling and Student Development Center, located on the second floor of the Wales Building, is staffed by professional counselors and open to all BCC students, full-time and part-time, day or evening. The Center is open from 8 a.m. to 8:30 p.m., Monday through Thursday, and 8 a.m. to 4:30 p.m. Friday during the academic year. Students should become acquainted with the Center by stopping in at their convenience or calling for an appointment. A special brochure is available at the Center, giving details about the services.

CAREER AND LIFE PLANNING

Broome Community College offers an opportunity for students to explore interests, strengths and values in both an individual and group setting. Knowing as much as possible about oneself is the first step in understanding goals related to self fulfillment and to the world of work. The Counseling and Student Development Center can help in the process of self-evaluation and has information on career possibilities, audio-visual aids, testing procedures and techniques used in the process of exploring career fields and making career decisions. Counselors work closely with the College's Placement Center staff in offering students a comprehensive approach to career planning.

TRANSFER TO 4-YEAR COLLEGES AND UNIVERSITIES

Broome Community College has developed a fine reputation for its successful preparation of students for study at senior institutions. Students desiring to continue their education are encouraged to consult with a counselor in the Counseling and Student Development Center, their faculty advisor, or department chairperson for assistance in selecting a program and/or institution that is appropriate to their goals, abilities and aspirations.

To these ends, the College conducts the Transfer Emphasis Program, which consists of visits to the campus by representatives of four-year schools to recruit and advise potential transfer students. These visits occur each semester, and they are designed to expedite the information process necessary to insure a smooth transition between community college and various four-year programs. The representatives, generally from admissions offices, discuss life on their campuses, financial assistance possibilities and activities available, in addition to the traditional explanations of all their academic programs.

Applications for the **State University of New York** colleges and university centers are available in the Counseling and Student Development Center. Students should apply directly to all **other colleges** (non-SUNY units) by requesting an application and any other pertinent data from the admissions office of the desired college.

All students should arrange at the BCC Registrar's Office to have copies of their transcripts forwarded to the admissions offices of the colleges to which they are applying. This will insure proper transfer of applicable credits. Any requests for references and recommendations may be forwarded to the Counseling and Student Development Center, and all acceptances and rejections of applications should also be reported to the Center.

Any questions or problems regarding transfer should also be directed to the Counseling and Student Development Center, which can help students determine if another college is accredited. For information on special transfer opportunities, see pages 17 and 18.



PERSONAL COUNSELING

Counseling is available for students experiencing social, personal and family concerns. Counselors attempt to help students face their problems with an holistic approach. Assistance is given in both direct and indirect ways, by exploring, understanding and dealing with tasks and crises related to the problems being experienced. Counselors may make referrals to appropriate community agencies, if that should be necessary and mutually agreeable. All counseling is strictly confidential.

ACADEMIC COUNSELING

Counselors are available to help students put their academic efforts into the proper perspective by analyzing their study, social and work habits to enable them to utilize their time in the most efficient way.

TESTING

The Counseling and Student Development Center offers students the opportunity to engage in a testing program. When appropriate, it can be arranged for a student to take a variety of tests including personality and interest inventories. Cognitive style mapping is also available to help students better understand their individual learning preferences. The tests can help students develop self awareness and improve their decision-making ability.

HUMAN DEVELOPMENT COURSES

Courses are offered which provide students with an opportunity to examine their values, attitudes, beliefs and abilities. The courses also offer an opportunity to learn how these factors affect the quality of relationships with others. In addition, the students examine the challenge and problems of society as they relate to their development. All courses are transferable for credit. See page 97 for course descriptions.

ORIENTATION PROGRAM

Freshman, transfer or re-admitted students will have an opportunity to participate in various advising, counseling and orientation sessions as well as social and cultural activities prior to and during the semester of acceptance into the College. Information concerning these activities will be mailed to all students prior to the beginning of the semester.

The staff of the Student Affairs Office endorses the concept that a community college environment should facilitate the development of the whole student.

SPECIAL WORKSHOPS AND SEMINARS

The Center offers a variety of workshops and seminars throughout the college year. Those that have been offered cover such topics as relaxation techniques, career exploration, cognitive style mapping, returning to college, and assertiveness training.

PROGRAM FOR PEOPLE OVER 60

Any citizen of New York State who is 60 years of age or more may "audit" courses at Broome Community College without charge, as long as there is space available. In this connection the word "audit" means these students take the course by attending classes and being exposed to all the work given in class and assigned in the text. They do not have to do the homework or take the examinations, however, and they receive no letter grade or college credit.

WOMEN'S PROGRAMMING

Broome Community College counselors are responsive to all students and, in particular, the women who make up more than 50% of the current student body. The women range in age from their teens to their 70's, with many of them returning to school after varying numbers of years away from the classroom.

Women can learn individually and in small groups how to begin a program, schedule it into their lives, and receive information, support and encouragement. The many counseling programs the center offers can help them achieve their academic goals, whether it be a few courses or a degree to transfer to a 4 year college or to find employment.

STUDENTS FROM OTHER NATIONS

The College welcomes and encourages qualified students from other countries to enroll and is authorized by the United States Department of Justice to issue necessary Certificates of Eligibility (Form I-20). For admissions information, these students should contact the Admissions Office at Broome Community College, P.O. Box 1017, Binghamton, New York 13902, U.S.A.

Most programs at the College have different admission standards. However, as a minimum for entering the College, students must:

- Demonstrate proficiency of the English language by (1) submitting official TOEFL scores of 400 or better or a Michigan Test score of 65 or better or (2) submitting official English language translations of transcripts from all secondary schools and colleges attended in order to prove successful completion of at least 4 full years of English language instruction.
- Submit TOEFL or Michigan test scores, if either of these tests of English language proficiency have been taken. Students whose native language is not English must also take a special language proficiency exam at the College before they are allowed to register for classes.
- Provide an affidavit of financial support and a transcript in English (certified translation) of all secondary school or college work.
- Show evidence of health insurance coverage. The National Association of Foreign Student Affairs offers a health plan to meet the needs of foreign students. Information on this plan will be sent to students upon acceptance into the College.

No housing is provided for students at BCC. Some local residents list available housing with the College, and students are responsible for making their own housing arrangements. It is estimated that College costs and living expenses approximate \$6,000 per year.

The College provides an advisor to assist students from other countries in all areas of student life while at Broome Community College. Both academic and non-academic problems may be discussed with the advisor, whose office is in the Wales Building, Room 210.

Most students who attend Broome Community College will eventually enter the labor market. Getting a job, particularly that first entry level position, requires an understanding of how to contact employers and what job hunting techniques provide the best employment success. The Placement Office not only helps students locate positions but offers assistance in resume writing and interviewing techniques.

The Placement Office lists full-time, part-time and seasonal jobs from employers who want to hire Broome Community College students and alumni. Most of these positions are related to academic programs at the College, and they are of particular value to students wishing to gain experience in their chosen field. The New York State Employment Service "Job Bank" and employment counselor are also available on a daily basis in the Placement Office (Wales Building, Room 201).

The quality of the College's academic programs is well known by many companies both locally and nationally. During the spring semester of every year, representatives of business and industry visit the campus to interview potential graduates for employment purposes. Students wishing information regarding this recruiting program should contact the Placement Office by November 1.

Individual appointments can be made to discuss job market predictions, salary expectations, and other questions related to employment.

88½ % of 1982 GRADUATES FOUND JOBS OR TRANSFERRED

• **1030 GRADUATES IN CLASS OF 1982** at Broome Community College, and 86% of them responded to survey. All statistics here are based on that 86% response.

• **88½ % OF THE 1982 GRADUATES** either found employment or transferred to 4-year colleges, thus enabling BCC to fulfill its two major missions of preparing graduates for immediate employment or transfer to 4-year colleges.

- 51½% of the graduates went to work.
- 37% transferred to 2 and 4 year colleges or other technical programs.
- 10½% were unemployed at the time of the survey.
- 1% unavailable for work.

• **STARTING SALARIES** of those who went to work averaged \$12,662 a year and ranged from \$24,120 down to \$6,000. About 46% reported salary information.

• WHERE THEY WENT TO WORK—

73% of those who went to work found jobs in Broome County, with an additional 11% working elsewhere in the Southern Tier. In addition, 6% got jobs elsewhere in New York State, and another 10% went outside of the state.

• WHERE THEY TRANSFERRED TO—

- 67% of those who are continuing their higher education transferred to colleges in the State University of New York (SUNY) system.
- 24% to private colleges in New York State.
- 9% to out-of-state colleges and universities.

• LEADING EMPLOYERS, in order:

Large industries in NY State,
such as (in order) IBM,
Eastman Kodak, Singer Link,
Endicott Johnson, Savin,
NY State Electric & Gas,
General Electric, Uni-
versal Instruments,
Norwich-Eaton Pharmaceuticals
Hospitals and Nursing Homes
in Broome County
Small Businesses in Broome County
Retail stores in Broome County

Small to medium industry in
Broome County
Hospitals and Nursing Homes
in New York State
Grocery Stores in Broome County
Day Care, Education and Non-Profit
Organizations in Broome County
City and County Civil Service
Restaurants and Fast Food Franchises
in Broome County
Out-of-State Large Industries
New York State Civil Service

• COLLEGES TO WHICH BCC GRADUATES TRANSFERRED IN 1982, in order:

SUNY at Binghamton
Rochester Institute of
Technology
Clarkson College of Technology
SUNY at Buffalo
SUNY College at Cortland
SUNY College at Oswego

SUNY College of Technology
at Utica/Rome
SUNY College at Potsdam
SUNY College at Brockport
SUNY College at Fredonia
SUNY College at Geneseo
Rensselaer Polytechnic
Institute

PLACEMENT

THE ACADEMIC AREAS

Summary placement figures for each of Broome Community College's six academic areas. Percentages are based upon the number of graduates heard from and not the total number. Salary information is for entry level positions, those who had jobs before enrolling at BCC and kept them are not included.

BUSINESS—318 graduates, 58% employed, 10% unemployed, 31% transferred, 1% unavailable for work. Salary info—\$9,825 average, \$20,000 to \$6,000 range.

COMPUTER STUDIES—69 graduates, 45% employed, 12% unemployed, 42% transferred, 1% unavailable for work. Salary info—\$11,307 average, \$17,150 to \$7,200 range.

HEALTH SCIENCES—150 graduates, 75% employed, 15% unemployed, 9% transferred, 1% unavailable for work. Salary info—\$13,121 average, \$21,900 to \$7,800 range.

LIBERAL ARTS—200 graduates, 22% employed, 9% unemployed, 67% transferred, 2% unavailable for work. Salary info—\$9,591 average, \$13,000 to \$7,800 range.

ENGINEERING AND ENGINEERING TECHNOLOGY—234 graduates, 50% employed, 9% unemployed, 40% transferred, 5% unavailable for work. Salary info—\$16,373 average, \$24,120 to \$9,000 range.

SPECIAL CAREER PROGRAMS—70 graduates, 63% employed, 10% unemployed, 25% transferred, 2% unavailable for work. Salary info—\$7,746 average, \$10,400 to \$6,000 range.

CURRICULUMS

Following is a summary of each curriculum of BCC's six academic areas in which there were graduates last year. Percentages are based on number of graduates reporting, not total number.

ENGINEERING AND ENGINEERING TECHNOLOGY

CHEMICAL ENGINEERING TECHNOLOGY—29 graduates, 71% employed, 18% unemployed, 7% transferred, 4% unavailable for work. Salary info—\$16,697 average, \$19,240 to \$10,000 range.

CIVIL ENGINEERING TECHNOLOGY—14 graduates, 64% employed, 14% unemployed, 21% transferred, Salary info—\$13,003 average, \$21,000 to \$9,000 range.

ELECTRICAL ENGINEERING TECHNOLOGY—75 graduates, 62% employed, 10% unemployed, 28% transferred, Salary info—\$16,324 average, \$24,120 to \$10,000 range.

ENGINEERING SCIENCE—64 graduates, 5% employed, 5% unemployed, 90% transferred. No salary information.

INDUSTRIAL TECHNOLOGY—24 graduates, 90% employed, 5% unemployed, 5% transferred, Salary info—\$19,433 average, \$24,000 to \$15,100 range.

MECHANICAL ENGINEERING TECHNOLOGY—28 graduates, 67% employed, 7% unemployed, 26% transferred, Salary info—\$18,661 average, \$19,700 to \$12,500 range.

Student affairs at Broome Community College fall within three primary areas of responsibility—student development, student services, and student management.

Student Development responsibilities include counseling, international student affairs, academic advisement, testing, freshman orientation, student activities, intercollegiate athletics, drug abuse education, leadership training, career development, veterans advisement, personal development courses, transfer advisement.

Student Services cover admissions, financial aids, placement, health services.

Student Management concerns itself with student discipline, rights, responsibilities, judicial system and grievance procedures.

A comprehensive statement outlining the College's code of student conduct and student rights and responsibilities is available in the office of the Vice President for Student Affairs in Room 107 of the Wales Building. Students are welcome to examine it.

LIBERAL ARTS AND SCIENCES

ASSOCIATE IN ARTS DEGREE—170 graduates, 22% employed, 10% unemployed, 66% transferred, 1% unavailable for work. Salary info—\$9,585 average, \$11,440 to \$7,800 range.

ASSOCIATE IN SCIENCE DEGREE—9 graduates, 12.5% employed, 87.5% transferred. Salary info—\$13,000 average.

COMPUTER SCIENCE EMPHASIS—4 graduates, 50% employed, 50% transferred. Salary info—\$8,000 average.

CRIMINAL JUSTICE EMPHASIS—7 graduates, 20% employed, 80% transferred.

MENTAL HEALTH EMPHASIS—10 graduates, 22% employed, 67% transferred, 11% unavailable for work. Salary info—\$8,700 average, \$10,400 to \$7,000 range.

SPECIAL CAREER PROGRAMS

CHILD CARE—17 graduates, 86% employed, 7% transferred, 7% unavailable for work. Salary info—\$7,124 average, \$8,300 to \$6,000 range.

CRIMINAL JUSTICE—20 graduates, 53% employed, 47% transferred, Salary info—\$8,300 average, \$9,600 to \$7,000 range.

FIRE PROTECTION TECHNOLOGY—5 graduates, 80% employed, 20% transferred.

INDIVIDUAL STUDIES (A.A.S.)—4 graduates, 50% employed, 50% transferred.

INDIVIDUAL STUDIES (A.S.)—6 graduates, 67% employed, 33% transferred.

INDUSTRIAL SAFETY & OCCUPATIONAL HYGIENE—5 graduates, 80% employed, 20% unemployed.

PARALEGAL ASSISTANT—13 graduates, 42% employed, 33% unemployed, 25% transferred, Salary info—\$8,749 average, \$10,400 to \$7,098 range.

COMPUTER STUDIES

COMPUTER SCIENCE—32 graduates, 32% employed, 8% unemployed, 60% transferred, Salary info—\$13,683 average, \$17,150 to \$10,400 range.

DATA PROCESSING BUSINESS—28 graduates, 58% employed, 15% unemployed, 23% transferred, 4% unavailable for work. Salary info—\$10,594 average, \$15,600 to \$7,200 range.

DATA PROCESSING TECHNICAL—9 graduates, 44% employed, 11% unemployed, 44% transferred. No salary information.

HEALTH SCIENCES

DENTAL HYGIENE—24 graduates, 74% employed, 26% unemployed, Salary info—\$12,943 average, \$15,600 to \$9,600 range.

MEDICAL ASSISTANT—12 graduates, 92% employed, 8% unemployed, Salary info—\$9,007 average, \$11,000 to \$7,800 range.

MEDICAL LABORATORY TECHNOLOGY—12 graduates, 50% employed, 20% unemployed, 30% transferred, Salary info—\$11,500 average.

MEDICAL RECORD TECHNOLOGY—12 graduates, 55% employed, 18% unemployed, 27% transferred, Salary info—\$10,147 average, \$12,000 to \$8,300 range.

NURSING—71 graduates, 86% employed, 8.5% unemployed, 5% transferred, Salary info—\$14,291 average, \$21,900 to \$10,500 range.

RADIOLOGIC TECHNOLOGY—19 graduates, 53% employed, 26% unemployed, 16% transferred, 5% unavailable for work. No salary information.

Student Affairs

Educational Opportunity Program (EOP)

The Educational Opportunity Program is designed for students who are economically and educationally disadvantaged. It provides economic aid and remedial and developmental assistance, with the amount of financial aid based on need. Students who do not require financial assistance under this program may benefit from the educational services offered by EOP. To be funded by EOP, students must provide appropriate income information, and all students must be New York State residents as this is a state program. The EOP Office at the College is located in the Cecil C. Tyrrell Library.

Special Services Program

The Special Services Program at Broome Community College is a federally funded program.

The program provides counseling services, tutorial help and information concerning other student needs. Tutoring sessions are held during the day at Broome Community College and also evenings and weekends at designated off-campus spots. The Special Services counselor is located in the Cecil C. Tyrrell Library.

BUSINESS

ACCOUNTING—72 graduates, 69% employed, 11% unemployed, 16% transferred, 3% unavailable for work. Salary info—\$9,822 average, \$17,500 to \$6,000 range.

BUSINESS ADMINISTRATION—90 graduates, 26% employed, 8% unemployed, 66% transferred, Salary info—\$12,547 average, \$20,000 to \$8,500 range.

MARKETING MANAGEMENT—69 graduates, 67% employed, 10% unemployed, 21% transferred, 2% unavailable for work. Salary info—\$10,155 average, \$15,000 to \$6,753 range.

MARKETING SALES—40 graduates, 55% employed, 16% unemployed, 30% transferred, Salary info—\$8,918 average, \$12,000 to \$7,280 range.

OFFICE SERVICES—18 graduates, 81% employed, 6% unemployed, 6% transferred, 6% unavailable for work. Salary info—\$8,664 average, \$10,000 to \$6,240 range.

SECRETARIAL SCIENCES—29 graduates, 89% employed, 7% unemployed, 4% transferred, Salary info—\$9,525 average, \$14,456 to \$7,800 range.



Health Service

The College provides a Health Service which is available to all students. Professional staff includes a full-time Nurse Practitioner, a physician available 2 mornings a week for 3 hours, and one registered nurse on duty during regularly scheduled class periods.

The Health Service provides care for injuries and minor illness, as well as health counseling and referral service to community resources. It is a resource area for relevant student problems, and it furnishes a non-threatening environment for personal problems. All records are confidential, and health data is released only with the written authorization of the student. Common procedures performed by the Health Service include blood and urine tests, throat cultures, mono tests, screening for VD, allergy injections, pregnancy testing, breast exams, birth control and diet counseling.

The Health Service is located on the first floor of the Wales Building. Cots are available for students to obtain a few quiet moments in a busy schedule.

An Emergency Squad composed of students assists the Health Service to bring quick, efficient assistance in time of emergency. Students are encouraged to become active in this important function on campus.

Living Accommodations

The College has no dormitory facility and assumes no responsibility for student housing. As a service to students, the director of the Student Activities' Office maintains an up-to-date record of housing accommodations which landlords submit as being available. This listing is neither an approval nor rating by the College, nor will the College become a third party in any arbitration between students and landlords. Housing arrangements must be made directly by students and parents with local landlords.

Room and Board

The cost of room and board for out-of-town students is dependent upon the demands of the students. The average cost varies from \$60 to \$70 per week.



Student Activities

In recognizing the existence of "the other half" of college life, the College actively supports a co-curricular activity program that is funded by the student activity fee paid each semester. The Student Activities area represents one phase of campus life in which the students can and do have a voice in management and programming. The diversity of student interests is reflected in the 35 clubs and organizations active on campus. The involvement in Student Activities provides an opportunity to develop leadership abilities.

Credit can be earned for participation in some of these co-curricular activities. Students should check with their advisors for further information concerning these credits.

United Student Government

The official organization of student representation on the Broome Community College campus is the United Student Government (USG). Membership on the Executive Board of USG is decided by campus wide election. The remainder of the USG Senate is comprised of representatives from the College's Curriculums, Athletics, Media Board, Program Board, Freshman and Senior Class, Club Council. They are elected positions. The USG Senate holds weekly meetings, Thursdays at

11 a.m., to discuss all issues concerning the students. These issues are then presented to the appropriate faculty, staff or administrative area. A Student Trustee sits on the College Board of Trustees and presents information of student interest to this body.

United Student Government fulfills many student responsibilities on campus. It regularly reviews College policy and makes recommendations to the College Administration via the College Senate. Representatives of the USG Senate serve on the Faculty-Student Association. United Student Government has the responsibility for coordinating, distributing and supervising the student activity fee. The operation of the student government is important to students and puts student ideas and viewpoints into action.

Program Board

One of the most active organizations on campus is the Program Board. Dances, Broadway road shows, Spring Picnic, noon-hour programs featuring famous artists and speakers, and cultural events both on and off campus are the products of the programmers' efforts. This Board is a voice for students in selecting the kinds of entertainment they prefer.

Club Council

The body that governs the actions and funding of the 35 clubs and organizations on campus is Club Council. The diversity of club activities varies with the diversity of interests of the student body. There are curriculum clubs, service organizations, international and minority student interest groups, emergency squad, choir and instrumental music clubs and various athletic organizations. Every club on campus is open for any student who pays the student activity fee. Club Council meets twice monthly with one representative from each club forming the Senate body. If a club or organizational activity that has student interest is not represented on campus, students can visit Club Council for information on starting one.

Media Board

The students involved in activities under the Media Board have the opportunity to experiment with different forms of communication. The Fulcrum and Citadel require literary and photographic interests and skills and the Audio-Media Organization appeals to those with an interest in radio broadcasting and helps to develop those talents.

Fulcrum (campus newspaper) offers a variety of information for the students. It speaks out on important issues, offers the humorous side of student life, and gives the students a chance to voice their opinions through editorials and human interest stories.

Citadel (the yearbook) provides an opportunity for students to work on a more lasting project and to cover the entire college year in words and pictures.

Audio-Media Organization is for students who want to be involved in live broadcasting. This organization provides the cafeteria with recorded music—radio style—and always needs enthusiastic disc jockeys for its "WROX" operation in the cafeteria.

Student Center

The busiest and most versatile building on the Broome Community College campus is the Student Center. It houses the gymnasium, the College Cafeteria, Book Store, and the Little Theater, and many of the social events are held here. This building is used by day and evening students of all curriculums.

Adult Lounge

A comfortably furnished room in the Y-Building located near the Nursing Building at 901 Front Street has a refrigerator for storing bag lunches. It provides an area for study, conversation, a quiet lunch or coffee break.

The Union

The Union is the short, flat, tan building on campus that is known as **The Place** for students to enjoy their break from the books. From eight o'clock in the morning until five in the afternoon, the Union provides diverse recreational activities. Electronic games, ping pong, pool, foosball and pinball are available for play and relaxation. The Union provides the warmth of a fireplace, a lounge for playing chess or cards, a video beam projector for viewing TV and feature films daily and, of course, vending machines.

The Union has a business side as well. It houses the student offices for The Union Manager, United Student Government, Club Council Executive Board, the Fulcrum and the Citadel. For information on any facet of Student Activities, visit the College's Student Activities Office in The Union.

Other Clubs

In addition to the co-curricular activities listed on this page and the next one, other organizations are active on campus. These include:

Art and Design Club	Inmate Education
Audio Media	International Student
Aviation Club	Organization
Camera Club	Lacrosse Club
Campus Bible Fellowship	Third World
Cheerleaders	Organization
Circle K	Newman Club
Emergency Squad	Outing Club
Ski Club	Weight Club

These are open to all full-time students and to part-timers who pay the student activity fee. Details are available in the Student Handbook and from the Director of Student Activities.

Performing Arts

Theatre/BCC

Complementing the studio and academic course work in theater is the group known as Theatre/BCC. All students are invited to participate, whether or not enrolled in formal course work.

Theatre/BCC enjoys a fine artistic reputation, presenting a broad range of theatrical styles, and provides its actor/technicians with varied opportunities for ensemble as well as individual training. Theatre/BCC provides a challenging and exciting experience for students with an interest in the theater, and most of its productions are performed in the intimate setting of the College's Little Theater.

NOTE: Students may receive transferable credit for active participation in College Choir, the Instrumental Music Association and Theatre/BCC. The conditions for this credit are available from one's advisor.

Music

College Choir is sponsored jointly by the Liberal Arts Division and United Student Government. Choristers have gained an excellent reputation and are exposed to a broad range of choral literature reflecting the varied demands for community concerts. The chorus traditionally produces its own Christmas program for local television and presents an annual Spring Concert, as well as performing for local church and civic organizations. The College Choir, moreover, makes an annual concert tour to such places as Washington, D.C., or Williamsburg, Va. Rehearsals are held weekly and all students as well as faculty and staff are welcome to sing in the ensemble.

The **Instrumental Music Association** offers students who have previously played instruments the chance to continue their involvement in small ensembles (brass, woodwind, string and recorder) and the College Stage Band. A limited program of private coaching is also available.

BCC Jazz Ensemble offers instrumentalists a chance to perform jazz and jazz-rock on campus, in the community, at competition and on tour. Its 20 members strive for high quality performing and the enjoyment of working together toward this goal. A group of eight singers is used for popular arrangements with the band.

Improvisation, beginning and intermediate piano, beginning and intermediate voice, beginning guitar reading classes are available to BCC students.

The Theater and Music Programs have joined in musical theater productions. Any BCC students who are interested may audition for performance on stage or in the orchestra.

Professional Society Affiliates

Since exposure to organizations in their fields of study is considered of benefit to students, many curriculums have their own affiliates of national professional societies. Among these are:

Society of Manufacturing Engineers (SME) for Mechanical Engineering Technology students.

Dental Hygiene Association, an affiliate of the American Dental Hygiene Association.

Institute of Electrical and Electronics Engineers (IEEE) for Electrical Engineering Technology students.

In addition, some meetings of local professional societies are attended by students, as the **American Chemical Society** invites Chemical Engineering Technology students to its meetings. Some professional societies hold meetings on campus, too, and students are always welcome to attend. Thus students have the opportunity to become acquainted with professional people in their fields of study and to attend lectures and see films and demonstrations of new developments.

Curriculum Organizations

In addition to the student organizations listed above that are affiliated with professional societies, the College has a number of associations that are identified with specific curriculums. Among these are the Business Club, the Civil Technology Association, the Medical Assistants Association, the Medical Laboratory Technology Society, the Student Nurses Association, the Lively Arts from the Liberal Arts curriculum, and the Student Organization of Radiologic Technologists.

Honor Societies

Phi Theta Kappa

In 1962, the Mu Eta Chapter of Phi Theta Kappa was established at the College. Phi Theta Kappa is a national honor society at two-year colleges, similar in purpose to Phi Beta Kappa at the four-year colleges and universities. Mu Eta Chapter is open to freshmen and seniors at Broome CC who have achieved outstanding academic grades.

Sigma Phi Alpha

The national dental hygiene honor society, Sigma Phi Alpha, has a chapter at Broome CC, the Upsilon Chapter. Senior Dental Hygiene students who rank highest in scholarship and who exhibit potential qualities for future growth and attainment are selected for membership.

Tau Alpha Pi

The national honor society for students in engineering technology programs, Tau Alpha Pi has established a chapter on the Broome Community College campus. It is the Beta Theta Chapter. This society recognizes outstanding academic achievement in BCC engineering technology curriculums in Electrical, Civil, Chemical and Mechanical Technology.

Athletics

Intramurals

Physical activity is a vital part of an individual's life, regardless of physical capability. With this in mind, the Physical Education Department coordinates an intramural program for all students enrolled at the College. Students are invited to participate in team sports such as soccer, gym hockey, basketball, volleyball and softball. For those interested in individual competition or "play for fun", sports such as tennis, golf, badminton, horseshoes and bowling are also offered.

Women's Sports

Broome Community College fields women's teams in five varsity sports—tennis, cross country, volleyball, basketball and softball—and they have achieved some fine success in recent years. The tennis team, for example, has captured several individual and team regional titles; the volleyball team was invited to the first-ever national volleyball tournament and this past season was the second-ranked team in Region III and had a fine record of 27-9-1. Furthermore, both the basketball and softball teams played in the Region III Championships, with the softball players losing in the final game.

Men's Sports

Broome Community College fields men's teams in eight varsity sports — cross country, soccer, wrestling, basketball, ice hockey, tennis, golf and baseball.

BCC athletic teams have earned an excellent reputation in two-year college competition. Included in the basketball team's more than 790 victories are 10 regional titles, and the team recently played its 1000th intercollegiate game. The tennis team has also been a frequent regional winner, and the baseball team has continued to be a regional factor since capturing its third Region III title in 1974.

The golf team had a recent stretch of 39 wins in 40 dual matches and in 1982 won all six of the region's weekly invitational tournaments. Then it captured its second straight Region III title. The ice hockey team, which recently changed from club to varsity status, has shown rapid improvement. The soccer team has also been good enough in recent years to be invited to post-season competition.

BOOK STORE

The College Book Store, or Campus Store as it is sometimes referred to, is located in the Student Center and actually has two areas of operation—the Textbook Department and The Campus Shop.

In the Textbook Department students may purchase their required books. To avoid standing in long lines the first week of classes, students are urged to purchase their books during the advance sale period, which is the week preceding the start of classes in both the fall and spring semester. Books are not available prior to this advance sale period. It is advisable to purchase all required textbooks early in the semester. In addition to the obvious reason of using them for studying, all unsold books must be returned to the publisher shortly after the semester begins.

The Campus Shop offers a variety of items. In addition to such classroom supplies as notebooks, paper, pens and binders, there are art and drafting materials, imprinted gift items and sportswear, and an extensive selection of paperbacks.

Students who have any special problems, suggestions or requests should feel free to contact store management.

ALUMNI

The Broome Community College Alumni Association provides a link between the College and its Alumni, and its activities include the awarding of a number of scholarships each year and the active and monetary support of various college programs.

Any graduate may become a member by paying the modest lifetime dues of \$20. (An increase to \$25 was being considered when this Catalog was prepared).

There are no annual dues. Membership entitles alumni to discounts for some on-campus functions; group term/life insurance at special rates; voting eligibility for the Board of Directors including rights to stand for election to a seat on the Board. Alumni also receive the College's BCC NEWSLETTER, and the Alumni Association conducts an annual Dinner-Dance. Alumni are encouraged to join and participate.

FACULTY-STUDENT ASSOCIATION

The Faculty-Student Association of Broome Community College, Inc., is an educational corporation designed to provide to the College, and particularly to the students and faculty, services that are not included in the regular College budget.

It provides the corporate organization through which the student fees are expended under a budget prepared by the United Student Government. It also operates the College Book Store.

The Book Store earnings augment student fees to support new or special activities. The association is governed by a board of directors elected by members who hold certain offices on campus. The operating philosophy is to make the educational program outside of the classroom a well-rounded supplement to the students' academic experiences.

About Broome Community College

Broome Community College is a comprehensive community college. It has programs designed to prepare graduates both for immediate employment and for transfer to four-year colleges and universities at the junior, or third-year, level.

In addition to its daytime enrollment, which numbered 3,600 last year, the college has a continuing education program which had about 3,200 part-time evening students in the fall of 1982 and about 1,500 taking courses during the Summer Session.

The College is co-educational, publicly-supported, and has historically attracted about two-thirds of its student body from Broome County and one-third from outside the county. The ratio has recently been closer to 80% and 20%.

The day student body can be classified into six parts, based on study objectives—the business programs, engineering and engineering technology curriculums, health science courses, liberal arts programs, computer studies, and special career offerings.

The College is sponsored by Broome County, supervised by the State University of New York, and accredited by both professional and educational organizations (see inside front cover).

The Campus

The College campus is located three miles north of Binghamton on Upper Front Street, which is Route 11 and Route 12 at this point running alongside of Interstate 81. Nine of the 13 buildings form two contiguous quadrangles to make a compact campus layout.

Most of the buildings are two stories high, of modern functional design, and made of brick with colored panelwall facing. They lie in a suburban setting in the virtual center of the College's 120 acres of land.

Classes are also held at the Nimmensburg Center, one mile north of the campus on Front Street.

In addition to classrooms and laboratories, the campus has its own cafeteria, gymnasium and athletic fields, and a Little Theater. These facilities add up to make the campus a multi-million dollar investment in the youth of Broome and surrounding counties.

Campus Carillon

The College has a Maas-Rowe symphonic carillon, which tolls the hours with the Westminster chimes and occasionally plays musical selections through its automatic music roll attachment. The carillon was a gift to the College, donated by former trustee Dr. Leopold Eckler and the College Foundation.

The College graduated its first class in 1949. These students had entered what was then known as the New York State Institute of Applied Arts and Sciences at Binghamton in the fall of 1947. The original institute was one of five founded in the state in 1946, following the pattern of six agricultural and technical institutes which New York had established earlier in the century. The first programs offered were all occupational in nature and included Chemical, Electrical and Mechanical Technology, as well as Medical and Technical Office Assistant curriculums.

In 1953 New York relinquished operating control of the school to a new sponsor, the County of Broome, under provisions of the State Community College Law, and the name was changed to Broome County Technical Institute. In 1956 the name was again changed, to Broome Technical Community College, to reflect the increasingly comprehensive nature of the educational offerings. In 1971 the name became Broome Community College as the scope of the curriculums continued to expand.

The Civil Technology program was added to the five original curriculums in 1957. Dental Hygiene was introduced in 1956, and the Business programs were expanded to include offerings in Accounting, Marketing, Engineering Secretarial in the 1950's. Executive Secretarial was added in the early 1960's.

A big change in the College's programs began in the late 1950's as a result of a new emphasis on university-parallel or transfer programs to go along with the college's occupational offerings. Engineering Science, the

The Community

The community is an industrial and agricultural area in New York State's Southern Tier. It is in the approximate center of the state, measuring from east to west, and its southern extremity touches the Pennsylvania state line.

Binghamton is the principal city in Broome County, but it is only a part of the community known as the Triple Cities. Endicott and Johnson City, along with Vestal and other suburbs, help to make the community much larger in population and geography than the city of Binghamton.

Binghamton has a population of about 55,000 and Broome County's population exceeds 200,000. Diversified industry in the community includes such firms as IBM, General Electric, The Link Division of Singer Co., Savin, New York State Electric & Gas Corp., Universal Instruments and Endicott Johnson.

The College has become an integral part of the community since it was started in 1946. Many of the campus facilities are offered at nominal cost for use by responsible organizations, and most of the College's curriculums are designed to help fill the economic needs of the county.

History of the College

First two years of an engineering program, was introduced in 1958, Liberal Arts and Sciences in 1962 and Business Administration in 1963.

In the late 60's interest began to develop in the health science field. As a result, the College introduced a degree-granting program in X-Ray Technology in 1965, added Medical Laboratory Technology in 1966, Nursing a year later, and Medical Record Technology in 1969. The College was responding to the changing needs of the area and adjusting its offerings to fulfill the mission of catering to the post-high school educational needs of the community.

Criminal Justice and Child Care have been added since, and degree programs in Individual Studies and in Industrial Safety and Occupational Hygiene were recently introduced, along with Office Services Assistant. Additional new offerings have more recently been added in Computer Studies and in Tool and Die Making.

For its first five years, the school was housed in a refurbished State Guard Armory in downtown Binghamton. This building was located across the street from The Forum and was gutted by fire in September 1951. For the next five years, Kalurah Temple (now the Church of God Building on Washington Street) and two other buildings in the city provided temporary quarters. In 1957 the College moved to its present campus just north of Binghamton. The first addition to the original campus came with the construction of Titchener Hall, which was dedicated in 1963. The Library Building was completed five years later, and the Business Building opened in 1972.

Programs of Study by Curriculum

The academic programs, whose display of courses appears on pages 32 to 57, are designed primarily for full-time students of the College. It is possible, however, for one to study for an associate degree in any of these curriculums on a part-time basis. To do this, one should contact the appropriate department chairperson. The College's programs that are intended mainly for part-time students appear on pages 58 to 68.

BUSINESS

DEPARTMENT CHAIRMAN, Appointment Pending
Business Building, Room 108
Telephone 771-5133

ACADEMIC ADVISING, William Matechak
Business Building, Room 106
Telephone 771-5171

The Business Department offers courses of study in three areas—Accounting, Business Administration and Marketing. In addition, emphases are offered within these areas in banking, management and sales. These programs were planned with the assistance of advisory committees, made up of businessmen and women currently working in the fields.

To assist the incoming student in selecting the proper option, all have a common first semester. Thus, the final decision of programs can be delayed until registration for the second semester.

Cooperative work experience is available to many business students. This course offers the student both first-hand practical experience and college credit.

A majority of these programs is designed to prepare the graduate for immediate employment. Others,

such as Business Administration, are designed to facilitate transfer to a four-year college or university. However, transfer of some courses is possible from each of the programs.

As every college has its own transfer policy, the number of credits accepted will vary. So as soon as students identify the school to which they wish to transfer, they should contact that institution to determine the courses which are acceptable. Schools with the American Assembly of Collegiate School of Business Accreditation often accept BUS 100 and 101 Accounting I and II, BUS 118 and BUS 120 Business Law I and II, BUS 115 Business Statistics and BUS 110 Introduction to Business.

Graduates of the business programs who went to work in 1982 averaged \$9,825 in starting salaries, with a wide range from \$20,000 to \$6,000.

BUSINESS ADMINISTRATION

FIRST YEAR Fall Semester

			Hours per Class	Week Lab	Credits per Semester
BUS 100	Accounting I		4	0	4
*BUS 112	Business Mathematics		2	0	2
BUS 118	Business Law I		3	0	3
BUS 141	Marketing		3	0	3
ENG 110	Written Expression I		3	0	3
			15	0	15

Spring Semester

BUS 101	Accounting II		4	0	4
BUS 120	Business Law II		3	0	3
CST 110	Introduction to Data Processing		3	0	3
†MAT 139	Algebra or		3-4	0	3-4
BUS 115	Business Statistics		3	0	3
ENG 120	Written Expression II		3	0	3
			16-17	0	16-17

*If a student has passed the Business Mathematics placement test, he/she takes a free elective.

†If a student has passed Mathematics 11 or intermediate algebra in high school, he/she takes BUS 115 Business Statistics.

SECOND YEAR Fall Semester

Elect 1 of the following 4 courses:					
BUS 200	Intermediate Accounting I		(4)	0	(4)
BUS 249	Personnel Management		(3)	0	(3)
CST	Computer Programming				
	Elective		(2)	(2)	(3)
	Liberal Arts Elective		(3)	0	(3)
ECO 110	Introduction to Micro-Economics		3	0	3
MAT 121	Finite Mathematics		3	0	3
	Lab Science Elective		3	3	4
	Liberal Arts Elective		3	0	3
PED	Physical Education		2	0	1
			16-18	3-5	17-18

Spring Semester

Elect 1 of the following 4 courses:					
BUS 201	Intermediate Accounting II		(4)	0	(4)
BUS 245	Management: A Behavioral Approach		(3)	0	(3)
	Liberal Arts Elective		(3)	0	(3)
	Computer Programming				
	Elective		(2)	(2)	(3)
ECO 111	Introduction to Macro-Economics		3	0	3
MAT 146	Introduction to Calculus		3	0	3
	Lab Science Elective		3	3	4
	Liberal Arts Elective		3	0	3
			14-16	3-5	16-17

ACCOUNTING

FIRST YEAR Fall Semester

			Credits per Semester	
			Hours per Week	
			Class	Lab
BUS 100	Accounting I		4	0
*BUS 112	Business Mathematics		2	0
BUS 118	Business Law I		3	0
BUS 141	Marketing		3	0
ENG 110	Written Expression I		3	0
			15	0

Spring Semester

Spring Semester					
BUS 101	Accounting II		4	0	4
CST 110	Introduction to Data Processing		3	0	3
ENG 120	Written Expression II		3	0	3
SPK 102	Effective Speaking		3	0	3
Elect 1 of the following:					
BUS 120	Business Law II	}	3	0	3
BUS 157	Report Writing				
			16	0	16

*If a student passes the Business Mathematics placement exam, he/she takes a Business elective.

SECOND YEAR Fall Semester

BUS 200	Intermediate Accounting I		4	0
BUS 205	Cost Accounting I		4	0
PHS 111	Physical Science for Today		2	2
	Social Science Elective		3	0
Elect 1 of the following:				
BUS 245	Management: A Behavioral Approach		(3)	(0)
BUS 295	Accounting Seminar		(4)	(0)
CST	A programming language course		(2)	(2)
			15-17	2-4

Spring Semester

BUS 201	Intermediate Accounting II		4	0
BUS 206	Cost Accounting II		4	0
MAT 124	Statistics		3	0
	Social Science Elective		3	0
Elect 1 of the following:				
BUS 270	Decision Making		(3)	(0)
BUS 295	Accounting Seminar		(4)	(0)
CST	A programming language course		(2)	(2)
			16-19	0-2

ACCOUNTING—BANKING EMPHASIS

FIRST YEAR Fall Semester

			Credits per Semester	
			Hours per Week	
			Class	Lab
BUS 100	Accounting I		4	0
*BUS 112	Business Mathematics		2	0
BUS 118	Business Law I		3	0
BUS 141	Marketing		3	0
ENG 110	Written Expression I		3	0
			15	0

Spring Semester

ECO 111	Introduction to Macro-Economics		3	0
BUS 101	Accounting II		4	0
BUS 120	Business Law II		3	0
ENG 120	Written Expression II		3	0
PSY 110	Psychology		3	0
			16	0

SECOND YEAR Fall Semester

BUS 245	Management: A Behavioral Approach		3	0
CST 110	Introduction to Data Processing		3	0
SPK 102	Effective Speaking		3	0
PHS 111	Physical Science for Today		2	2
†ECO 253	Money and Banking		3	0
			14	2

Spring Semester

BUS 249	Personnel Management		3	0
BUS 224	Business Finance		3	0
BUS 152	Selling Fundamentals		3	0
	Mathematics or Science Elective		3-4	0-3
	#Business Elective		3-4	0
			15-17	0-3

*If a student passes the Business Mathematics placement exam, he/she takes a Business elective.

†If enrollment does not justify offering daytime sections, students must attend evening classes in this subject.

#Suggested Business Electives include such American Institute of Banking (AIB) courses as Analyzing Financial Statements, Installment Credit, Principles of Bank Operations, Supervision and Personnel Administration, as well as BUS 297 Co-operative Work Experience.

MANAGEMENT EMPHASIS

FIRST YEAR
Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BUS	100	Accounting I	4	0	4
*BUS	112	Business Mathematics	2	0	2
BUS	118	Business Law I	3	0	3
BUS	141	Marketing	3	0	3
ENG	110	Written Expression I	3	0	3
			15	0	15

Spring Semester

BUS	101	Accounting II	4	0	4
BUS	120	Business Law II	3	0	3
ENG	120	Written Expression II	3	0	3
PHS	111	Physical Science for Today	2	2	3
ECO	110	Micro Economics	3	0	3
			15	2	16

SECOND YEAR
Fall Semester

BUS	115	Business Statistics	3	0	3
BUS	152	Selling Fundamentals	3	0	3
BUS	245	Management: A Behavioral Approach	3	0	3
CST	110	Introduction to Data Processing	3	0	3
SPK	102	Effective Speaking	3	0	3
		Social Science Elective	3	0	3
			18	0	18

Spring Semester

BUS	224	Business Finance	3	0	3
BUS	270	Decision Making	3	0	3
BUS	249	Personnel Management	3	0	3
†MAT	117	Elementary Finite Mathematics with Algebra	(4)	0	(4)
		or			
†MAT	121	Finite Mathematics	(3)	0	(3)
		Elect 1 of the following:			
CST	118	Computer Programming—COBOL	(2)	(2)	(3)
CST	120	Computer Programming—FORTRAN	(2)	(2)	(3)
		Business Elective	(3)	(0)	(3)
			14-16	0-2	15-16

*If a student passes the Business Mathematics placement exam, he/she takes a Business elective.

†If a student has passed Mathematics 11 or Intermediate Algebra in high school, he/she takes MAT 121 Finite Mathematics.

SALES EMPHASIS

FIRST YEAR
Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BUS	100	Accounting I	4	0	4
*BUS	112	Business Mathematics	2	0	2
BUS	118	Business Law I	3	0	3
BUS	141	Marketing	3	0	3
ENG	110	Written Expression I	3	0	3
			15	0	15

Spring Semester

BUS	120	Business Law II	3	0	3
PSY	110	Psychology	3	0	3
BUS	152	Selling Fundamentals	3	0	3
BUS	249	Personnel Management	3	0	3
ENG	120	Written Expression II	3	0	3
			15	0	15

*If a student passes the Business Mathematics placement exam, he/she takes a Business elective.

SECOND YEAR
Fall Semester

BUS	229	Advertising	4	0	4
CST	110	Introduction to Data Processing	3	0	3
SPK	102	Effective Speaking	3	0	3
PHS	111	Physical Science for Today	2	2	3
BUS		Business Elective	3	0	3
ECO	110	Micro Economics			
		or	3	0	3
SOC	110	Introduction to Sociology			
			18	2	19

Spring Semester

BUS	129	Consumer Behavior	3	0	3
BUS	157	Business Report Writing	3	0	3
BUS	242	Marketing Seminar	3	0	3
BUS	245	Management: A Behavioral Approach	3	0	3
BUS	264	Retailing	3	0	3
		Mathematics or Science Elective	3-4	0-3	3-4
			18-19	0-3	18-19

CHEMICAL ENGINEERING TECHNOLOGY

DEPARTMENT CHAIRMAN, James Spalik
Science Building, Room 108, Telephone 771-5009

The Chemical Engineering Technology curriculum is designed to meet the increasing demand for chemical technicians. Graduates of the Chemical Engineering Technology program have the education and training which qualifies them for immediate gainful employment and/or further study for advanced degrees. This background makes the Chemical Engineering Technology graduates highly sought after by employers and concurrently affords them the flexibility to advance academically.

Chemical technicians of both sexes have filled a vital manpower need in companies and organizations where background in various areas of chemistry is necessary or desirable. The constant development of new products, for example, creates a demand for chemical technicians.

Employers of chemical technicians include IBM, Anitec, Eastman Kodak, Allied Chemical, DuPont, Norwich-Eaton Pharmaceuticals, GE,

American Cyanamid, Union Carbide, Bristol Laboratories, Warner-Lambert and many other industrial firms as well as government agencies, hospitals and educational institutions.

Initial positions are usually in a research, development, process, quality control or analytical laboratory or in a pilot plant. In these positions a chemical technician may work for a senior staff member or be a member of a group working in a particular area. Experienced chemical technicians have become supervisors, group leaders, technical salesmen and research and development technicians.

The 1982 graduates of this program averaged \$16,697 in starting salaries, as these ranged from \$19,240 to \$10,000.

This curriculum is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

FIRST YEAR Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
ENG 110	Written Expression I	.....	3	0	3
CHM 161	Chemistry	.....	3	3	4
*MAT 141	Algebra and Trigonometry	.....	4	0	4
PHY 141	Physics	.....	3	2	4
			13	5	15

Spring Semester

ENG 150	Technical Writing	.....	3	0	3
CHM 162	Chemistry	.....	3	3	4
*MAT 142	Applied Calculus I	.....	4	0	4
PHY 142	Physics	.....	3	2	4
CST 140	Computer for Chemists	.....	2	2	3
			15	7	18

SECOND YEAR Fall Semester

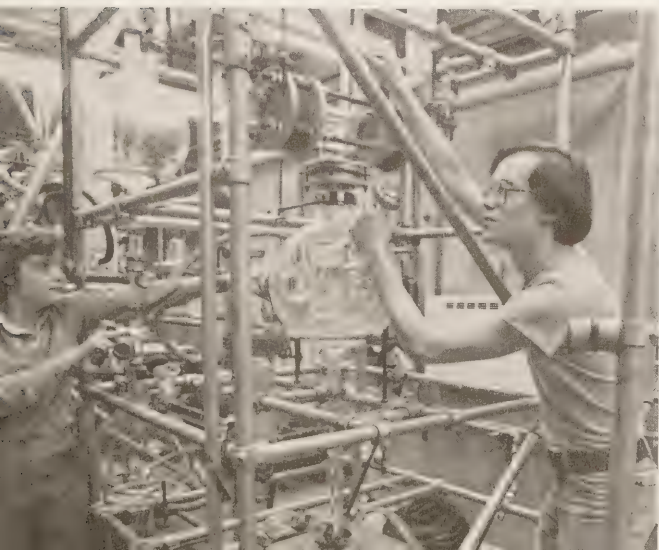
CHM 261	Organic Chemistry	.....	3	6	5
CHM 265	Analytical Chemistry	.....	3	6	5
CHM 271	Chemical Processes	.....	3	4	5
	Social Science Elective	.....	3	0	3
			12	16	18

Spring Semester

CHM 262	Organic Chemistry	.....	3	6	5
CHM 266	Analytical Chemistry	.....	3	6	5
CHM 272	Chemical Processes	.....	3	4	5
	Social Science Elective	.....	3	0	3
			12	16	18

GRADUATION REQUIREMENT: 69 CREDITS

*or MAT 163-164 Calculus with Analytic Geometry I and II.



Chemical Engineering Technology students prepare for an experiment on the department's Pilot Plant Scale Distillation Apparatus.



CHILD CARE

DEPARTMENT CHAIRMAN, Francis J. Short
Department of Special Career Programs
Mechanical Building, Room 214
Telephone 771-5087

COORDINATOR: Marilyn Schafer
Mechanical Building, Room 219, Telephone 771-5029

This Child Care program leads to an Associate in Applied Science (AAS) degree and is designed to prepare graduates for immediate employment or, in the case of those students who are already working in the Child Care field when they enroll, to improve their capabilities and increase their opportunities for advancement. It is open to students on both a full-time and a part-time basis.

The starting salary for graduates of the AAS degree program in Child Care who go to work immediately after graduation as aides or assistant teachers varies between \$4 and \$5 per hour. Directors' positions usually require a baccalaureate degree with an average salary of \$14,000 to \$17,000 a year. Two-year college graduates sometimes become direc-

tors with an additional salary which will vary with teachers' salaries.

A professional portfolio of materials pertaining to the education of young children is required of all students in the program. Assistance is provided in all classes for development of this material.

PLEASE NOTE

The curriculum display shown here is for full-time students, and they should be aware that careful advisement is necessary to enable them to be properly scheduled in this program to complete the work in two years. *Anyone interested in enrolling as a full-time student should, therefore, consult with the coordinator or department chairman first.* The curriculum display for part-time students appears on page 62.

FIRST YEAR Fall Semester

			Hours per Week	Credits per Semester
			Class Lab	
ENG	110	Written Expression I	3	0 3
PSY	110	General Psychology	3	0 3
SOC	110	Introduction to Sociology	3	0 3
*CDC	110	Introduction to Education of Young Children	2	2 3
†CDC		Child Care Elective	2-3	0-2 3
			13-14	2-4 15

Spring Semester

ENG		English or Literature Elective	3	0 3
PSY	211	Child Development	3	0 3
*CDC	120	Curriculum Development	2	2 3
		Humanities Elective	3	0 3
‡		Related Elective	3	0 3
			14	2 15

SECOND YEAR Fall Semester

*CDC	170	Practicum I			3
†CDC		Child Care Elective	2-3	0-2	3
		Math/Science Elective	3-4	0-3	3-4
†CDC		Child Care Elective	2-3	0-2	3
		‡Related Elective	3	0	3
			10-13	0-7	15-16

Spring Semester

*CDC	240	Social Development of Young Children	2	2	3
*CDC	290	Practicum II			6
†CDC		Child Care Elective	2-3	2-0	3
		Math/Science Elective	3-4	0-3	3-4
			7-9	2-7	15-16

*CDC COURSES ARE GIVEN MAINLY IN THE EVENING.

†CDC electives may be taken from among CDC 115 Music for Young Children, CDC 140 Art for Young Children, CDC 150 Motor Development, CDC 160 Nutrition for Young Children, CDC 180 Child Health and Safety, CDC 210 Special Problems in Children, CDC 220 Trends in Education of Young Children, CDC 230 Working with Parents in Nursery Programs, CDC 250 Language in Early Childhood, LIT 263 Children's Literature, CDC 190 Infants, Toddlers and the Family.

‡Related electives may be taken from among PSY 212 Adolescent Development, PSY 214 Abnormal Psychology, PSY 217 Counseling and Interviewing, PSY 227 Behavior Modification, SOC 210 Crime and Deviant Behavior, SOC 230 Marriage, Family and Divorce, SAC 101 The Individual in a Changing Environment, SAC 295 Seminar in Human Potential or from other disciplines.

CIVIL ENGINEERING TECHNOLOGY

DEPARTMENT CHAIRMAN, Stephen G. Steele
Mechanical Building, Room 117
Telephone 771-5223

The Civil Engineering Technology curriculum at Broome Community College is designed to prepare graduates for technical positions in the civil engineering and construction industries. The primary objective of the program is to train engineering technicians who will work for civil engineers, heavy and building contractors, surveyors and architects. The construction industry, considering all related goods and services such as manufacturing and transportation, is the largest industry in the country.

Starting positions may be in computer-aided design (CAD), drafting design, estimating, testing of materials, specification writing, construction inspection, surveying, field engineering, sales and insurance adjusting. Excellent opportunities exist

for advancement and promotion. Starting salaries in 1982 averaged \$13,000 and ranged from \$21,000 to \$9,000.

The Civil Engineering Technology Department offers two degrees: 1—the Associate in Applied Science degree in Civil Engineering Technology is offered during the day. This degree is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). 2—The Associate in Applied Science degree in Industrial Technology, Civil Technology major, is offered in the evening.

FIRST YEAR Fall Semester

		Hours per Week		Credits
		Class	Lab	per Semester
CIV 111	Surveying I	2	6	4
CIV 115	Engineering Drawing I	1	3	2
CIV 110	Introduction to Technologies	1	0	½
ENG 110	Written Expression I	3	0	3
†MAT 141	Algebra and Trigonometry	4	0	4
*PHY 141	Physics	3	2	4
		14	11	17½

Spring Semester

CIV 112	Surveying II	1	3	2
CIV 117	Architectural Drafting I	1	3	2
CIV 124	Mechanics	3	0	3
†MAT 142	Applied Calculus I	4	0	4
PHY 142	Physics	3	2	4
ENG 150	Technical Writing	3	0	3
		15	8	18

*Students entering the program without physics may elect to take PHY 100 Preparatory Physics I during the first semester in place of PHY 141 Physics. PHY 141 Physics may be taken during the spring semester and PHY 142 Physics during the summer. This would allow the student to graduate on schedule. Preparatory Physics is not applicable toward the degree.

†Or MAT 163-164 Calculus with Analytic Geometry I and II.

Graduates of the program are eligible to become certified as Associate Engineering Technicians by the Institute for the Certification of Engineering Technicians.

It is expected that, nationwide, many new and exciting jobs will be created. The energy crisis has brought a great increase in activity to make this country self-sufficient. Billions of dollars will be spent on electric power generation, en-

vironmental pollution control and the infrastructure.

In order for students to complete the curriculum in two years, the proper preparation is necessary. The minimum prerequisites are high school intermediate algebra, trigonometry and regents physics or their equivalents. For those wishing to enter the program without these prerequisites, Broome Community College offers the necessary preparatory courses. It would then usually take an additional semester or two to graduate. A special schedule will be worked out with the department chairman.

SECOND YEAR Fall Semester

CIV 215	Strength of Materials	4	0	4
CIV 217	Materials Testing	2	3	3
CST 122	Scientific Computer Programming FORTRAN	2	2	3
	Social Science Elective	3	0	3
	Technical Elective (Choose 1)			
CIV 238	Architectural Design and Building Materials	(2)	(3)	(3)
CAD 200	Introduction to Computer Graphics	(2)	(4)	(3)
*MAT	Mathematics Elective	(4)	(0)	(4)
		13-15	5-9	16-17

Spring Semester

†CIV 224	Reinforced Concrete Design or	2	3	3
CIV 226	Structural Steel Design			
	Social Science Elective	3	0	3
	Technical Electives (Choose at least 10 credits)			
CIV 212	Route Surveying and Photogrammetry	(3)	(3)	(4)
CIV 236	Construction Management	(3)	(0)	(3)
CIV 231	Estimating and Construction Planning	(2)	(3)	(3)
CIV 240	Soil Mechanics	(2)	(3)	(3)
CIV 235	Hydraulics	(3)	(3)	(4)
*MAT	Mathematics Elective	(3)	(0)	(3)
		14-15	6-15	17-18

†Waiver of this requirement by permission of department chairman only.

*For students planning to transfer to a 4-year college. Prior approval by department chairman required.

GRADUATION REQUIREMENT: 67½ CREDITS

COMPUTER STUDIES

DEPARTMENT CHAIRPERSON, Mary Diegert
Titchener Hall, Room 221-F
Telephone 771-5022

The Computer Studies Department at Broome Community College offers four degree programs in the computer field—Computer Science, Data Processing, Data Processing—Technical, Industrial Technology with Computer Emphasis. The Computer Science program leads to the Associate in Science degree, while graduates of the other three receive the Associate in Applied Science degree.

The 1982 graduates of these programs who went to work averaged \$11,307 in starting salaries, which ranged from \$17,150 to \$7,200.

THE COMPUTER SCIENCE PROGRAM prepares students for interesting and challenging careers in systems and applications programming, mathematics, systems analysis and operations research by providing the first two years of a four-year degree sequence. During the first semester the student is assigned an advisor and encouraged to investigate transfer colleges with a future career in mind, as career goals influence elective choices.

Programmers, for example, would study many different languages plus data structures and systems. Systems programmers would take, in addition, computer logic and microprocessors. A mathematics, systems analysis or operations research major would eliminate some language courses and substitute higher level math courses.

THE DATA PROCESSING PROGRAM is business oriented. It prepares students for entry level employment as business applications programmers and apprentice financial systems programmer/analysts. Courses studied include accounting and mathematics to learn problem analysis; computer language courses to design and code problem solutions; English, speech, report writing and social science courses to communicate the solutions to others.

THE DATA PROCESSING—TECHNICAL PROGRAM is oriented toward scientific programming with some emphasis on hardware design and function. It prepares students for entry level employment as scientific applications programmers and in the emerging field of micro-computer hardware-software design. Courses studied include mathematics and logic to learn problem analysis; high level and assembly languages to design and code solutions; English, speech and technical writing courses to communicate solutions to others.

INDUSTRIAL TECHNOLOGY WITH COMPUTER EMPHASIS is intended primarily for part-time students attending classes in the evening. Information on this program appears on page 63.

In every Computer Studies program the student must learn to write well documented, easy to read, structured programs. The required structured programming language Pascal leads toward that goal.

The following excerpt from a publication of the Better Business Bureau ("Facts on Computer Careers," 1977) should be helpful to those considering careers in the field:

"For all its dynamic growth, the computer field is still in its infancy. Opportunities for advancement are limited primarily by the individual's skills, educational background, ability to communicate, and personal drive. However, genuine aptitude and desire are critical.

"In addition to adequate training, most jobs in the computer field require certain personal traits which are of prime importance. Foremost is the ability to think logically. Also important are the ability to systematically organize, analyze and handle data and information; close attention to detail and accuracy; and the ability to use imagination in devising new solutions to existing problems."

COMPUTER SCIENCE (Associate in Science Degree)

FIRST YEAR Fall Semester

		Hours per Class	Week Lab	Credits per Semester
CST 111	Introduction to Computer Studies	3	0	3
CST 115	Problem Solving with Pascal	2	2	3
	English or Literature Elective	3	0	3
MAT 163	Calculus with Analytic Geometry I	4	0	4
	Social Science Elective	3	0	3
PED	Physical Education Elective	0	2	1
		15	4	17

Spring Semester

	English or Literature Elective	3	0	3
MAT 164	Calculus with Analytic Geometry II	4	0	4
PHI 202	Logic	3	0	3
	* MAT or CST Elective	2-4	0-2	3-4
	Social Science Elective	3	0	3
PED	Physical Education Elective	0	2	1
		15-17	2-4	17-18

SECOND YEAR Fall Semester

HIS	History Elective	3	0	3
	* MAT or CST Elective	2-4	0-2	3-4
	* MAT or CST Elective	2-4	0-2	3-4
	Laboratory Science Sequence	3	3	4
	* * Approved Elective	2-4	0-3	3-4
		12-18	3-10	16-19

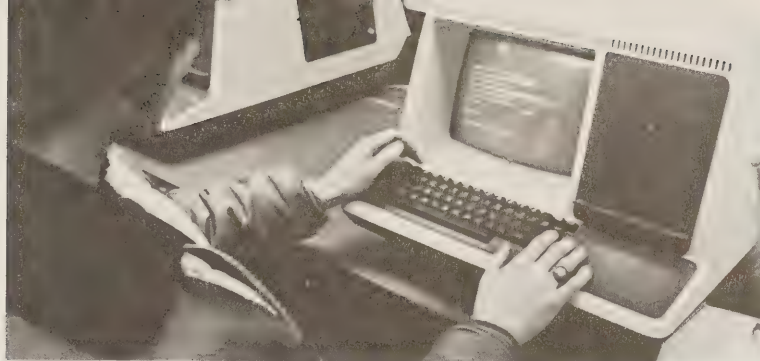
Spring Semester

MAT 252	Mathematical Modeling with the Computer	4	0	4
MAT 264	Linear Algebra	4	0	4
	Laboratory Science Sequence	3	3	4
	* * Approved Elective	2-4	0-3	3-4
		13-15	3-6	15-16

* MAT 124 Statistics, MAT 153 and 154 Discrete Math I and II, MAT 263 Calculus with Analytic Geometry III, MAT 266 Introduction to Higher Math. Any CST course except CST 110.

* * Chosen with career goal and transfer institution in mind and approved by Department Chairperson.

GRADUATION REQUIREMENT: 65 CREDITS



DATA PROCESSING—TECHNICAL (Associate in Applied Science Degree)

FIRST YEAR Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
CST	111	Introduction to Computer Studies	3	0	3
CST	115	Problem Solving with Pascal	2	2	3
ENG	110	Written Expression I	3	0	3
MAT	124	Statistics	3	0	3
		Laboratory Science Sequence	3	2-3	4
			14	4-5	16

Spring Semester

CST	122	Scientific Computer Programming—FORTRAN	2	2	3
ENG	150	Technical Writing	3	0	3
PHI	202	Logic	3	0	3
MAT	153	Discrete Mathematics I	4	0	4
		Laboratory Science Sequence	3	2-3	4
			15	4-5	17

SECOND YEAR Fall Semester

CST	112	Computer Logic	2	2	3
CST	126	Assembly Programming—BAL	2	2	3
CST	205	Advanced FORTRAN with Graphics	2	2	3
MAT	154	Discrete Mathematics II	4	0	4
		Social Science Elective	3	0	3
			13	6	16

Spring Semester

CST	202	Data Structures	2	2	3
CST	220	Introduction to Microprocessors	2	2	3
CST	222	Topics in Computer Systems	2	2	3
SPK	102	Effective Speaking	3	0	3
		Social Science Elective	3	0	3
			12	6	15

GRADUATION REQUIREMENT: 64 CREDITS

DATA PROCESSING (Associate in Applied Science Degree)

FIRST YEAR Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BUS	100	Accounting I	4	0	4
BUS	115	Business Statistics or	3	0	3
MAT	124	Statistics			
CST	111	Introduction to Computer Studies	3	0	3
CST	115	Problem Solving with Pascal	2	2	3
ENG	110	Written Expression I	3	0	3
			15	2	16

Spring Semester

BUS	101	Accounting II	4	0	4
CST	100	BASIC - (½ semester)	1	2	1
CST	118	Computer Programming—COBOL	2	2	3
ENG	120	Written Expression II	3	0	3
MAT	121	Finite Mathematics	3	0	3
SPK	100	Basic Speaking or	2-3	0	2-3
SPK	102	Effective Speaking	15-16	4	16-17

SECOND YEAR Fall Semester

BUS 157	Business Report Writing	3	0	3
CST 116	RPG II	2	2	3
CST 218	Advanced COBOL	2	2	3
PHS 111	Physical Science for Today	2	2	3
	Social Science Elective	3	0	3
		12	6	15

Spring Semester

BUS	270	Decision Making	3	0	3
CST	120	Computer Programming— FORTRAN or	2	2	3
CST	122	Scientific Computer Programming—FORTRAN	2	2	3
CST	200	Systems Analysis	2	2	3
CST	217	Advanced RPG II or	2	2	3
CST	126	Assembly Programming—BAL Social Science Elective	3	0	3
			12	6	15

GRADUATION REQUIREMENT: 62 CREDITS

DENTAL HYGIENE

DEPARTMENT CHAIRMAN, Dr. Frederick Johnson
Science Building, Room 108
Telephone 771-5149

The Dental Hygiene curriculum is designed to prepare students for the contemporary practice of dental hygiene. The curriculum emphasizes the fundamental knowledge necessary for practice in a private dental office or similar clinical setting under the supervision of a dentist.

The dental hygienist performs various services, such as dental prophylaxis, topical fluoride applications, dental radiographs and instruction in plaque control procedures. Successful completion of the curriculum permits one to take the required written and practical licensure examinations.

Dental Hygiene graduates aver-

aged \$12,943 as starting salaries in 1982, encompassing a range from \$15,600 to \$9,600.

Students must purchase instruments and pants uniforms which range from \$400-\$450 and pay license examination fees which range from \$200-\$250, in addition to textbooks.

Students who wish to pursue a career as a dental hygienist in public health, health management, health education or dental hygiene education are encouraged to transfer to a baccalaureate program after graduation.

The curriculum is accredited by the Council on Dental Education of the American Dental Association.

Dental Hygiene students in a clinical session in the College's Dr. James T. Ivory Dental Hygiene clinic.



FIRST YEAR Fall Semester

		Hours per Week		Credits per Semester
		Class	Lab	
BIO	131 Human Biology I	3	2	4
DEN	101 Dental Hygiene I	2	6	4
DEN	103 Oral Anatomy and Physiology	2	4	4
ENG	110 Written Expression I	3	0	3
†HSV	101 Cardio-Pulmonary Resuscitation	0	1	½
		10	13	15½

†This course will average out to one hour per week over the semester, but it will probably be given in clusters of 3 hours each in the evening or of 7½ hours each on Saturday to make a total of 15 hours.

Spring Semester

BIO	132 Human Biology II	3	2	4
DEN	102 Dental Hygiene II	4	8	6
DEN	106 Clinical Dental Radiography	1	2	2
BIO	160 Microbiology	2	3	3
SPK	102 Effective Speaking	3	0	3
		13	15	18

SECOND YEAR Fall Semester

DEN	201 Dental Hygiene III	2	12	5
DEN	204 General and Oral Pathology	3	0	3
DEN	205 Periodontology	2	0	2
DEN	209 Nutrition	3	0	3
DEN	213 Public Health	2	2	3
PSY	110 General Psychology	3	0	3
		15	14	19

Spring Semester

DEN	202 Dental Hygiene IV	2	12	5
DEN	206 Dental Pharmacology	2	0	2
DEN	210 Dental Materials	2	2	3
DEN	214 Dental Specialties	2	0	2
SOC	110 Introduction to Sociology	3	0	3
		11	14	15

NOTE: Students must have completed a course in CPR (Cardio-Pulmonary Resuscitation) prior to treating patients in the Spring Semester of the Freshman Year.

CRIMINAL JUSTICE CURRICULUM
on Page 43.



Electrical Engineering Technology students working on programs in the Microcomputer Laboratory.

ELECTRICAL ENGINEERING TECHNOLOGY

DEPARTMENT CHAIRMAN, Robert Reid
Electrical Building, Room 101
Telephone 771-5017

The Electrical Engineering Technology program at Broome Community College is made up of a planned sequence of college level courses leading to the associate degree, and it is designed to prepare men and women to work in the field of engineering technology. Engineering technology is concerned primarily with the application of established scientific and engineering knowledge and methods.

The graduate of the electrical program is an engineering technician who is trained to be the interface between the graduate engineer and the skilled craftsman. He/she may function in one or a combination of the following ways:

The technician translates problems

into functioning equipment, using his knowledge in mathematics, physics, linear and digital electronics, microprocessor applications, machines, process control, circuit analysis, and computer programming languages. He/she does this whether working in a small company as the only technician or in a large company as part of a team.

The technician works for companies like New York State Electric and Gas, International Business Machines, Xerox, Eastman Kodak, General Electric, Universal Instruments, Singer Link, Savin Corp., Raymond Corporation, National Cash Register, Bell Labs and Corning Glass.

Starting positions include engineering assistant, computer technician, electronics technician or laboratory, field service, test technician, or technical sales representative. Starting salaries for graduates averaged

\$16,324 in 1982, covering a range from \$24,120 to \$10,000.

Many technicians find that more education is desirable. While their basic education is not transfer-oriented, graduates of Broome Community College have successfully completed advanced study at State University of New York colleges at Binghamton, Utica-Rome, and Buffalo, at Rochester Institute of Technology, Clarkson College of Technology and others.

The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

State University of NY at Binghamton offers a TAC/ABET-accredited Bachelor of Technology program, for which the normal admission requirement is an AAS degree in an engineering technology discipline, such as Electrical Engineering Technology.

FIRST YEAR Fall Semester

			Hours per Week	Credits
			Class	Lab
				per Semester
CST 141	Fortran Programming with Graphic Applications	2	2	3
EET 111	Electrical Construction Laboratory I	1	3	2
EET 121	Electrical Circuits	4	3	5
EET 100	Introduction to Electrical Engineering Technology	1	0	½
ENG 110	Written Expression I	3	0	3
*MAT 141	Algebra and Trigonometry	4	0	4
		15	8	17½

Spring Semester

EET 112	Electrical Construction Laboratory II	0	3	1
EET 130	Engineering Drawing	0	3	1
EET 150	Electronics I	4	3	5
EET 162	Computer Aided Network Analysis	3	0	3
ENG 150	Technical Writing	3	0	3
*MAT 142	Applied Calculus I or	4	0	4
*MAT 163	Calculus with Analytic Geometry I			
		14	9	17

SECOND YEAR Fall Semester

EET 241	Electrical Machines and Controls I	3	3	4
EET 251	Electronics II	3	3	4
PHY 141	Physics	3	2	4
EET 267	Digital Electronics and Microprocessors	3	2	4
	Social Science Elective	3	0	3
		15	10	19

Spring Semester

EET 230	Electronic Design and Fabrication	0	3	1
EET 242	Electrical Machines and Controls II	4	3	5
EET 252	Electronics III	3	3	4
PHY 144	Physics II-E	3	2	4
	Social Science Elective	3	0	3
		13	11	17

GRADUATION REQUIREMENT: 70½ CREDITS

*Students should consult with the department chairman or his designee to determine the appropriate mathematics courses.

ENGINEERING SCIENCE

DEPARTMENT CHAIRMAN, Jack Foster
Titchener Hall, Room 221
Telephone 771-5276

FIRST YEAR Fall Semester

		Hours per Class	Week Lab	Credits per Semester
CHM 145	Chemistry	3	3	4
MAT 171	Engineering Calculus with Analytic Geometry I	4	0	4
EGR 150	Engineering Graphics	1	2	2
PHY 181	Engineering Physics I	3	2	4
	English or Literature Elective	3	0	3
EGR 100	Orientation	2	0	0
		16	7	17

Spring Semester

CHM 146	Chemistry	3	3	4
CST 124	Computer Programming for Engineers	2	2	3
MAT 172	Engineering Calculus with Analytic Geometry II	4	0	4
PHY 182	Engineering Physics II	3	2	4
	English or Literature Elective	3	0	3
EGR 100	Orientation	2	0	0
		17	7	18

SECOND YEAR Fall Semester

*EGR 281	Mechanics: Statics	3	0	3
EGR 285	Electrical and Electronic Circuits	3	0	3
EGR 287	Engineering Science Laboratory I	0	3	1
MAT 271	Engineering Calculus with Analytic Geometry III	4	0	4
PHY 281	Engineering Physics III	3	0	3
PED	Physical Education Elective	0	2	1
	Social Science Elective	3	0	3
EGR 100	Orientation	2	0	0
		18	5	18

Spring Semester

*EGR 282	Mechanics: Dynamics	3	0	3
EGR 286	Engineering Analysis	1	0	1
EGR 288	Engineering Science Laboratory II	0	3	1
MAT 272	Differential Equations with Linear Algebra	4	0	4
PHY 282	Engineering Physics IV	3	0	3
PED	Physical Education Elective	0	2	1
	Social Science Elective	3	0	3
EGR 100	Orientation	2	0	0
		16	5	16

*Organic Chemistry (CHM 261 and 262) may be substituted by students who are declared Chemical Engineering majors

GRADUATION REQUIREMENT: 69 CREDITS



Engineering Science student performing an experiment involving motion without friction in an introductory Engineering Science course.

The Engineering Science curriculum is designed primarily to prepare graduates to continue their studies in the various engineering disciplines at four-year colleges and universities. The strong emphasis on mathematics and physics also allows graduates to transfer to these majors at four-year institutions, with junior-year standing. In addition, there are immediate employment possibilities for qualified graduates who wish to terminate or postpone further educational goals until a more opportune time.

Broome Community College is a member of the New York State Two-Year/Four-Year Engineering College Curriculum Study Committee. The purpose of this organization is to facilitate the transfer to four-year colleges, with junior-year standing, of two-year college graduates from engineering science programs. Rensselaer Polytechnic Institute (RPI), Clarkson, Rochester Institute of Technology (RIT), Cornell, Syracuse, Union, and State University of New York at Buffalo and at Stony Brook are among the members of the Study Committee who have agreed to accept those two-year college graduates who have been recommended by their Engineering

Science departments. Feedback from these and other institutions to which Broome Community College students transfer indicates a high regard for the graduates and the quality of the Engineering Science program at BCC.

Those graduates who prefer to seek immediate employment will find job opportunities as engineering technicians or as assistants to engineers involved in research and development. In addition, employment opportunities also exist which involve the application of mathematics and computer programming.

The 1982 graduates of this program who went to work averaged starting salaries of \$16,373. These ranged from \$24,120 to \$9,000.

Students entering Broome Community College who wish to continue studying for their bachelor's degrees in engineering, applied mathematics, or physics will find the Engineering Science program the most appropriate course of study. As a reasonable guideline for successful achievement in this rigorous program, a student's course work in high school should be above the 80% level in all areas. (See page 7 for specific requirements).

CRIMINAL JUSTICE

DEPARTMENT CHAIRMAN, Francis J. Short
Special Career Programs
Mechanical Building, Room 214
Telephone 771-5087

COORDINATOR, William F. Michalek
Mechanical Building, Room 219, Telephone 771-5029

This program is designed for full-time students desiring employment after two years of study. Careful planning and selection of courses is necessary to complete the program in two years. Consult the Criminal Justice Coordinator for specific details on selection of proper electives. Criminal Justice electives are described on page 61, and most Criminal Justice courses are given in the evening.

FIRST YEAR Fall Semester

		Hours per Week		Credits
		Class	Lab	per Semester
ENG 110	Written Expression I	3	0	3
PSY 110	General Psychology	3	0	3
SOC 110	Introduction to Sociology	3	0	3
CRJ 101	Introduction to Criminal Justice	3	0	3
CRJ	Criminal Justice Elective	3	0	3
		15	0	15

Spring Semester

SPK 102	Effective Speaking	3	0	3
POS 201	American Political Systems	3	0	3
CRJ	Criminal Justice Elective	3	0	3
CRJ	Criminal Justice Elective	3	0	3
PHI	Elective in Philosophy	3	0	3
		15	0	15

SECOND YEAR Fall Semester

	Math/Science Elective	3-4	0	3-4
PSY	Elective in Psychology	3	0	3
SOC	Elective in Sociology	3	0	3
CRJ	Criminal Justice Elective	3	0	3
CRJ	Criminal Justice Elective	3	0	3
		15-16	0	15-16

Spring Semester

	Math/Science Elective	3-4	0	3-4
CRJ	Criminal Justice Elective	3	0	3
CRJ	Criminal Justice Elective	3	0	3
	*Free Elective	3	0	3
	*Free Elective	3	0	3
		15-16	0	15-16

*Social Sciences recommended.

INDIVIDUAL STUDIES

DEPARTMENT CHAIRMAN, Francis J. Short
Department of Special Career Programs
Mechanical Building, Room 214
Telephone 771-5087

To better meet the changing times and to provide an opportunity for students with unusual needs, Broome Community College allows **selected students** the opportunity to take a personally planned degree program. This program requires that the student develop, with an advisor, an "area of concentration." **This area of concentration must be a cohesive body of knowledge which the student can justify as having both educational and personal relevance.**

Completion of the Individual Studies Program can lead to an Associate in Science (AS) or Associate in Applied Science (AAS) degree, depending on the student's area of concentration. The AS degree program is designed for maximum transfer possibilities, and the AAS degree program has better immediate employment opportunities. **Admission into the program requires development of a Plan of Studies which is approved by the department chairman. This plan is developed by the student with a specific educational or career goal in mind.**

Associate in Science Degree (60 credits)

- 30 Credits in English, Humanities, Natural Sciences, Mathematics and Social Sciences.
- 30 Credits in student's Area of Concentration

Associate in Applied Science Degree (60 credits)

- Minimum of 20 semester credits in Liberal Arts and Sciences to include:
 - 6 Credits in Humanities (maximum of 3 hours in Speech)
 - 6 Credits in Social Science
 - 8 Credits in Natural and Physical Science, including Mathematics
- 10 Credits of Technical Electives
- 30 Credits in student's Area of Concentration

For additional information contact the Department Chairman.

LIBERAL ARTS AND SCIENCES

DIVISION DEAN, George Higginbottom
Titchener Hall, Room 121
Telephone 771-5031

The Liberal Arts curriculum is mainly a two-year university-parallel program designed especially for those who wish to continue their college education at a four-year school. Graduates of the College in its Liberal Arts program receive either the Associate in Arts or Associate in Science degrees, depending on which course of study they complete.

Students completing this curriculum, its science option or its other emphases will have a breadth of education that prepares them for many professional careers. The Science Option, for example, is ex-

cellent for those planning careers in forestry, chemistry, biology or medicine. Those aspiring to careers in the various professions will find alternatives in the Liberal Arts curriculum designed especially for them.

Students should be aware that many of these alternative curriculums presume a high level of preparation in the secondary school, and they should consult with faculty advisors or counselors when there is doubt about the adequacy of their pre-college academic background.

To qualify for any degree at Broome Community College, students must present a cumulative grade point average of 2.0 or above.



Career Preparation

For a great number of careers a rich background in liberal studies, as is presented in the Associate in Arts (AA) and Associate in Science (AS) degree programs, is essential. Students are urged to utilize the college resources thoroughly, and as early as possible, in locating useful information about their intended academic majors and their career aspirations.

The Liberal Arts advisement system is one which aims to match students with advisors who share their interests. If questions pertaining to career preparation, transfer opportunities and job placement cannot be answered by the faculty advisors, students will be directed to somebody who can. Key figures in the advisement picture are:



To start students thinking about a career and the preparation needed, a number of fields which suggest a Liberal Arts beginning is listed at right. The college does not offer courses in all these areas, and in some cases the professional courses are taught at the junior/senior level in baccalaureate programs.

Advertising
Architecture
Art
Child Care
Communications
Community/Human Service
Computing
Counseling
Criminal Justice
Data Processing
Design
Energy Research
Environmental Affairs
Foreign Service
Government Service
Home Economics
Interior Design
International Business
Labor Relations
Library Science

Management
Medicine
Oceanography
Optometry
Personnel
Public Relations
Public Service
Publishing
Real Estate
Recreation
Social Work
Scientific Research
Sports Writing
Teaching
Technical Writing
Translating
Transportation
Travel/Tourism
Urban Planning

Communication With Students

The division maintains Bulletin Boards in the Titchener Hall lobby and outside the office in Titchener Hall, Room 121. Students are urged to check the boards regularly for information pertaining to academic advisement, career planning, cultural events, transfer opportunities, convocations and lectures, concerts, and the like. Important notices and messages for students will also be posted. **Check the boards!**

Academic Advisement

FULL-TIME STUDENTS

Every full-time student is assigned a faculty advisor. During the first few weeks of classes, students should meet with their advisors to discuss academic and career plans.

Students are *encouraged* to meet regularly with their advisors thereafter. All students are required to complete in the presence of their advisors a Degree Advisement Contract prior to registering in subsequent semesters.

The Liberal Arts office staff is available to deal with special problems relating to academic requirements and transfer. While the faculty and staff will make every reasonable effort to help students with academic planning, students must also assume responsibility for their programs and, particularly, in meeting degree requirements.

PART-TIME STUDENTS

Part-time day students who intend to matriculate in a degree program sponsored by the Liberal Arts Division should come to the office (Room 121 in Titchener Hall) to be assigned academic advisors. Students not interested in a degree, but, nevertheless, seeking academic advice, may do so in the Liberal Arts office. Part-time evening students will be advised by representatives from the Center for Continuing Education.

Transfer

Students who have earned A.A. or A.S. degrees at Broome Community College and who intend to go on for baccalaureate degrees are guaranteed transfer to a four-year college or university of the State University of New York (SUNY). There is no guarantee, however, that students can complete all degree programs at transfer institutions in four semesters.

Students are urged to learn as much as they can relative to program requirements at the institution(s) to which they might transfer. For example, many four-year schools require foreign language. The decision to take a language at Broome Community College might thus be influenced by whether or not it is required at the college to which one intends to transfer.

The Liberal Arts Division is in the process of establishing guaranteed transfer arrangements with other public and private colleges. Inquiries about these agreements, some in force and some in progress, should be made in Titchener Hall, Room 121.

Honors

An Honors option for Associate in Arts degree (AA) students is available to second-semester freshmen. Associate in Science degree (AS) students who qualify can enroll in Honors seminars with permission of the Advisory Committee. Information is available in Room T-121.

	Credits Required
English ENG 110 and 120 Written Expression I and II	6
History HIS 100 Rise of the West or HIS 115 Modern Global History plus one other history (HIS) course.	6
Mathematics or elective (as advised) Students who have completed fewer than 3 units of secondary school mathematics (through Intermediate Algebra or "Course III") are required to take a minimum of 2 semesters of college level mathematics. Students who have completed 3 units of secondary school mathematics (through In- termediate Algebra or "Course III") are re- quired to take one semester of college level mathematics. Students who have completed more than 3 units of secondary school mathematics (in- cluding Intermediate Algebra or "Course III") are not required to take additional mathematics. They may, however, elect an appropriate math course or an elective in another field.	0-8
Laboratory Science A full-year <i>sequence</i> of biology, chemistry, physics or physical science. Acceptable sequences: BIO 111-112 General Biology I and II; BIO 131-132 Human Biology I and II; CHM 141-142 General Chemistry; CHM 145-146 Chemistry; PHY 161-162 Physics; PHS 113, 114, 115, or 116 Physical Science (any 2).	8
Philosophy or Foreign Language Sequence Students are encouraged to take both, but they must complete a year (6-8 credits) of philosophy or a foreign language se- quence.	6-8
Physical Education No more than 2 credits can be used to fulfill degree requirements.	2
Literature Any 2 LIT courses.	6
Social Science Any 2 courses from the following disciplines—anthropology, economics, geography, political science, psychology, sociology, social sciences. These have ANT, ECO, GEO, POS, PSY, SOC, SOS designators.	6
Electives Selections from approved listing preceding each semester's registration. Exceptions to receive approval of Dean of the LA Division.	14-24
Total number of credits	64 minimum

MODEL PROGRAMS

Minimum Credit—64 (All Earn Associate In Arts Degree)

The selection and arrangement of courses in these models reflect the following considerations:

- 1—similar programs at four-year colleges to which many BCC students transfer.
- 2—exposure to basic courses in these academic major or career areas.
- 3—completion of prerequisite courses in the first year.
- 4—requirements under the Associate in Arts degree.

Note: Students planning careers or majors in dentistry, medicine, forest biology or chemistry, and other science areas should refer to the Associate in Science degree "Science Option" display on page 48 following these models.

THESE MODELS ARE GUIDES AND ARE NOT INFLEXIBLE.

Students with advanced placement credit and those with 3½ units of academic mathematics will be able to take additional elective courses with their advisors' approval.

Students who enter with academic deficiencies may have to take more than the minimum 64 credits to earn the Associate in Arts degree.

64 credits required for AA degree. The following Model Programs suggest how courses could be arranged to acquire these credits.

ART				DESIGN ARTS			
FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)		FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)	
ENG 110 and 120	(6)	LIT electives	(6)	ENG 110 and 120	(3)	Laboratory Science	(8)
HIS 100	(3)	HIS electives	(3)	HIS 110 and HIS elective	(6)	sequence	(8)
MAT electives	(0-8)	Laboratory Science	(8)	MAT electives	(0-8)	LIT electives	(6)
		Sequence	(8)	Philosophy or Foreign		Social Science electives	(6)
Philosophy or Foreign		Social Science electives	(6)	Language	(6-8)	*PSY 110	
Language	(6-8)	ART electives	(9)	*PHI 111 and 112		Design electives	(12)
*PHI 111 and 112		*ART 215, 216		Design electives	(6)	*INT 110	
ART electives	(12)	*ART 105 or 106		*ART 105		†ART 115	
*ART 115		Physical Education electives (2)		*INT 101		†CIV 159	
*ART 101				Physical Education electives (2)		†ART 106	
*ART 116				Total	32	Total	32
*ART 140							
Total	33	Total	34				
VISUAL ARTS				CHILD CARE			
FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)		FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)	
ENG 110 and 120	(6)	Laboratory Science	(8)	ENG 110 and 120	(6)	HIS 110 and HIS elective	(6)
MAT elective	(6)	sequence	(8)	MAT electives	(0-8)	Philosophy or Foreign	(6-8)
Philosophy or Foreign		LIT electives	(6)	Laboratory Science		Language	(6-8)
Language	(6-8)	Social Science electives	(6)	sequence	(8)	LIT electives	(6)
HIS 100 and HIS elective	(6)	Visual Arts electives	(12)	*BIO 131 and 132		*LIT 263	
Physical Education electives (2)		*ART 101		Social Science	(6)	Child Care electives	(9)
Visual Arts electives	(6)	*ART 105, 106		*PSY 110		Free electives	(6)
*COM 200		*COM 203		*SOC 110		†PSY electives	
*COM 110				Child Care electives	(6)	†THR or MUS electives	
Total	32	Total	32	*CDC 100			
				Physical Education electives (2)			
				Total	34	Total	33
FOREST TECHNOLOGY (NY State Ranger School—Wanakena Requires concurrent application—to B.C.C. and Wanakena)				CYTOTECHNOLOGY (For Transfer to Upstate Medical Center "B" grades in science courses required)			
FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits) (Wanakena)		FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)	
ENG 110 and 120	(8)			ENG 110 and 120	(6)	BIO 131 and 132 (opt.)	(8)
MAT 139 and 140	(8)			BIO 111 and 112	(8)	LIT electives	(6)
ECO 110 or 111	(3)			CHM 145 and 146	(8)	BIO 150	(4)
BIO 111 and 112	(8)			MAT 124	(3)	Social Science electives	(6)
Electives	(6)			HIS 100 and HIS elective	(6)	Philosophy or Foreign	
*BIO electives				Physical Education electives (2)		Language	(6-8)
Total	31	Total	32			Elective	(3)

COMMUNICATIONS AND MEDIA			
FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)	
ENG 110 and 120	(6)	Laboratory Science	(8)
HIS 110 and HIS elective	(6)	sequence	(8)
Philosophy or Foreign		LIT electives	(6)
Language	(6-8)	Social Science electives	(6)
MAT electives	(0-8)	*PSY 110	
Physical Education electives (2)		*SOC 110	
Communications Media		Communications Media	
courses	(6)	courses	(12)
*COM 100		*COM 203	
*COM 120		*COM 110	
*COM 200		*ENG 163	
		*SPK 102	
Total	32	Total	32
CIVIL AND PUBLIC SERVICE			
FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)	
ENG 100 and 120	(6)	LIT electives	(6)
HIS 100 and HIS elective	(6)	Philosophy elective	(3)
*HIS 131		*PHI 206	
Philosophy or Foreign		Social Science elective	(3)
Language	(3-4)	*POS 204	
MAT electives	(0-6)	Related electives	(20)
*MAT 124		ECO 104, 110, 111	
Laboratory Science		PSY 110	
sequence	(8)	SOC 110, 111	
Social Science elective	(3)	BUS 100	
*POS 201		BUS 245, 257	
Physical Education electives (2)			
Total	32	Total	32
ELEMENTARY EDUCATION			
FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)	
ENG 110 and 120	(6)	LIT electives	(6)
HIS 100 and HIS elective	(6)	*LIT 263	
MAT 119 and 120	(6)	Social Science electives	(6)
Laboratory Science		*PSY 110	
sequence	(8)	*SOC 110	
Philosophy or Foreign		*GEO 110	
Language	(6-8)	Physical Education electives (1)	
Physical Education electives (1)		Electives	(18)
		*PSY 211	
		*ART electives	
		*MUS electives	
		†PSY 212, 227	
		†ANT 111	
Total	33	Total	31
MEDICAL TECHNOLOGY (For Transfer to Upstate Medical Center "B" grades in science courses required)			
FIRST YEAR Courses (Credits)		SECOND YEAR Courses (Credits)	
ENG 110 and 120	(6)	BIO 131	(4)
BIO 111 and 112	(8)	BIO 150	(4)
CHM 145 and 146	(8)	CHM 245	(5)
MAT 141 or equivalent	(4)	PHY 161	(4)
HIS 100 and HIS elective	(6)	Philosophy or Foreign	
Philosophy or Foreign		Language	(3-4)
Language	(3-4)	Social Science electives	(6)
Physical Education electives (1)		CHM 224	(4)
		LIT electives	(6)
		Physical Education electives (1)	
Total	36	Total	36
*THESE COURSES ARE "STRONGLY RECOMMENDED" †THESE COURSES ARE "RECOMMENDED"			

THESE COURSES ARE "STRONGLY RECOMMENDED"

THESE COURSES ARE "RECOMMENDED"

BUSINESS (For Transfer to Baccalaureate Programs in Business) This model is appropriate for transfer to SUNY Binghamton School of Management			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	LIT electives (6)		
HIS 100 and HIS elective (6)	Laboratory Science sequence (8)		
*MAT 124 and 146 or 163 (6-7)	ECO 110 and 111 (6)		
Philosophy or Foreign Language (6-8)	*BUS 100 and 101 (8)		
Physical Education electives (2)	*BUS 245 or 257 (3)		
Business electives	†CST 100, 110, 118, 120 (1-3)		
*BUS 110 (3)			
*BUS 118 (3)			
Total 32-34	Total 34		

FOREST MANAGEMENT			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	Philosophy or Foreign Language (6-8)		
HIS 100 and HIS elective (6)	LIT electives (6)		
MAT electives (0-8)	Social Science electives (6)		
*MAT 163, 164	†ECO 110 and 111 sequence (8)		
Laboratory Science	Laboratory Science sequence (8)		
*BIO 111 and 112	*PHY 161, 162 (8)		
Physical Education electives (2)	Electives (6)		
Electives (8)	*PSY 110, SOC 110, 111		
*CHM 145 and 146	*POS 201 or 204		
Total 36	Total 32		

JOURNALISM			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	Laboratory Science sequence (8)		
HIS 100 and HIS elective (6)	LIT electives (6)		
MAT electives (0-8)	Social Science electives (6)		
Philosophy or Foreign Language (6-8)	Journalism electives (12)		
*Foreign Language	*ENG 164		
Physical Education electives (2)	*ENG 165		
Journalism electives (6)	†COM 110		
*ENG 163	†SPK 102		
*COM 100	†COM 120, 121		
Total 32	Total 32		

PHYSICAL THERAPY (For Transfer to Upstate Medical Center "B" grades in all required courses)			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	PHY 161 and 162 (8)		
MAT 161 (163 recommended) (4)	PSY 110 and 211 (6)		
BIO 111 and 112 (8)	SOC 110 (3)		
CHM 145 and 146 (8)	HIS elective (3)		
HIS 100 and HIS elective (6)	Philosophy or Foreign Language (6-8)		
	LIT electives (6)		
	Physical Education electives (2)		
Total 32	Total 34		

THEATER			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 100 and 120 (6)	Laboratory Science sequence (8)		
HIS 100 and HIS elective (6)	LIT electives (6)		
MAT electives (0-6)	*LIT 230, 233		
Philosophy or Foreign Language (6-8)	Social Science electives (6)		
Physical Education electives (2)	†PSY 110		
Theater electives (6)	Theater electives (12)		
*THR 190	*THR electives		
*THR 111, 112			
*THR 221			
Total 32	Total 32		

LANDSCAPE ARCHITECTURE			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	LIT electives (6)		
HIS 100 and HIS elective (6)	Social Science electives (6)		
MAT electives (0-8)	Philosophy or Foreign Language (3-4)		
*MAT 139, 140	Related courses (18)		
sequence (8)	*CIV 115		
*BIO 111, 112	*CIV 111		
Philosophy or Foreign Language (3-4)	*CST 110		
Physical Education electives (2)	*PHS 116		
	†PHY 161		
	†MAT 163, 164		
	†INT 101		
Total 32	Total 32		

MUSIC			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	Laboratory Science sequence (8)		
HIS 100 and HIS elective (6)	LIT electives (6)		
MAT electives (0-6)	Social Science electives (6)		
Philosophy or Foreign Language (6-8)	*ANT 111		
†Italian or	Music electives (12)		
†PHI 111, 112	*MUS 191		
Physical Education electives (2)	*MUS 106		
Music electives (7)			
*MUS 191			
*MUS 101			
*MUS 105			
Total 32	Total 32		

PHYSICAL EDUCATION/RECREATION			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	LIT electives (6)		
HIS 100 and HIS elective (6)	Social Science electives (6)		
MAT electives (0-6)	*PSY 211		
Philosophy or Foreign Language (6-8)	*PSY 212		
Physical Education electives (2)	Laboratory Science sequence (8)		
Related courses (6)	*BIO 131, 132		
*PSY 110	Related courses (12)		
*ART, MUS, THR, SPK	*PSY 103		
	†CDC		
	†ART, MUS, THR		
Total 32	Total 32		

SPECIAL EDUCATION			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	LIT electives (6)		
HIS 100 and HIS elective (6)	Philosophy or Foreign Language (3-4)		
MAT electives (6)	Social Science elective (3)		
*MAT 113, 119	*PSY		
Laboratory Science sequence (8)	Physical Education electives (2)		
*BIO 131, 132	Related courses (18)		
Social Science elective (3)	*PSY electives		
*PSY 110	*MUS, THR, ART		
Philosophy or Foreign Language (3-4)	*HUS 120		
Total 32	Total 32		

CRIMINAL JUSTICE			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	Laboratory Science sequence (8)		
HIS 100 and HIS elective (6)	*CHM 120 and 121		
MAT electives (0-8)	Philosophy or Foreign Language (6-8)		
*MAT 117	LIT electives (6)		
*MAT 124	Criminal Justice electives (9)		
Social Science electives (6)	Free electives (3)		
*PSY 110 and SOC 110	*SOC 210		
Criminal Justice electives (6)			
*CRJ 100			
Physical Education electives (2)			
Total 32	Total 32		

MUSEUM CAREERS			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	HIS elective (3)		
HIS 100 (3)	Laboratory Science sequence (8)		
MAT electives (0-6)	LIT electives (6)		
*MAT 124	Social Science electives (6)		
Philosophy or Foreign Language (6-8)	*ANT 110/111		
*Foreign Language	†PSY 110		
Physical Education electives (2)	†SOC 110		
Electives (7-10)	Electives (9)		
*ART 101	*INT 101		
*PHI 111/112	*ART 106		
*ART 105	*BUS 100		
	†ECO 110		
Total 32	Total 32		

PRE-LAW			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	LIT electives (6)		
HIS 100 and HIS elective (6)	Social Science electives (6)		
MAT electives (0-8)	Electives (18)		
Laboratory Science sequence (8)	POS 201, 204		
Foreign Language or Philosophy (6-8)	ECO 110, 111, 104		
	SOC 110, 111		
	HIS 130, 131		
	PSY 110		
	BUS 100		
	PHI 201, 206, 202		
	ART, MUS, THR		
	Physical Education electives (2)		
Total 32	Total 32		

PUBLIC HISTORY			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	LIT electives (6)		
HIS 100 and 131 (6)	*LIT 210, 211, 230		
MAT electives (0-8)	Social Science electives (6)		
*MAT 124	*POS 201, 204		
Philosophy or Foreign Language (6-8)	*PSY 110, SOC 110		
Physical Education electives (2)	Laboratory Science sequence (8)		
Electives (3-9)	Electives (12)		
*HIS 175	*SOC 120		
*POS 201	*HIS 130, 170, 180		
*POS 204	*SOS 120, 130		
	†ECO 110, 111		
Total 32	Total 32		

SOCIAL WORK/COUNSELING (See also Mental Health & Retardation emphasis)			
FIRST YEAR Courses (Credits)	SECOND YEAR Courses (Credits)		
ENG 110 and 120 (6)	LIT electives (6)		
HIS 100 and HIS 166 (6)	Philosophy or Foreign Language (6-8)		
MAT electives (0-6)	*SPA		
*MAT 124	Physical Education electives (2)		
Laboratory Science sequence (8)	Related courses (16)		
Related courses (6)	*SOC 210		
*PSY 110	*HIS 131		
*SOC 110	*PSY electives		
	*PHI 206		
Total 32	Total 32		

1 + 1 PROGRAMS (Freshman year BCC, Sophomore year at)			
DELHI A&T			
Architectural Technology			
Construction Technology			
PAUL SMITH'S COLLEGE			
Hotel Management Program			
Details in Titchener Hall, Room 121			

LIBERAL ARTS AND SCIENCES

Associate In Science Degree

Science Option

This program is designed for students planning careers in forest biology, forest chemistry, chemistry, biology, medicine, dentistry and related fields.

FIRST YEAR

	Credits Required Per Year
English ENG 110 and ENG 120 Written Expression I and II	6
History HIS 100 The Rise of the West and any other history (HIS) course	6
Mathematics MAT 163 and MAT 164 Calculus with Analytic Geometry I and II or if a student is not prepared for these courses, he or she may take MAT 139 Algebra or MAT 140 Trigonometry or MAT 161 Pre-Calculus Mathematics first	8
2 Laboratory Science Sequences BIO 111 and BIO 112 General Biology I and II and CHM 145 and CHM 146 Chemistry for those planning careers in medicine, veterinary medicine, dentistry, forest biology, marine biology, pharmacy or forest chemistry	16
Physical Education Any 2 PED courses.	2

SECOND YEAR

Literature Any 2 LIT courses	6
Social Science Any 2 courses from the following disciplines—anthropology, economics, geography, political science, psychology, sociology, social science. These have ANT, ECO, GEO, POS, PSY, SOC and SOS designators	6
2 Laboratory Science sequences PHY 161 and 162 Physics and CHM 245 and 246 Organic Chemistry for those planning careers in medicine, veterinary medicine, dentistry, forest biology, marine biology, pharmacy or forest chemistry	16
Mathematics, Philosophy or Foreign Language A student must fulfill the mathematics requirement before he or she can take a philosophy or foreign language course. If a student did not complete MAT 164 Calculus with Analytic Geometry II as a freshman, but instead took the other Mathematics courses listed above, then MAT 163 and MAT 164 should be taken now. If the student wishes to take a math course more advanced than MAT 164 and he or she has completed MAT 164, then he or she may take another mathematics course now. If the math requirement has been completed and the student does not elect to take addi- tional mathematics, then he or she is required to take any philosophy or foreign language courses.	6
Total number of credits	72 minimum

Mental Health & Retardation Emphasis

This course of study is mainly for students who wish to transfer to upper division degree programs in mental health and human services, and for those in entry level positions in appropriate public and private agencies. Broad preparation during the first year is followed by greater concentration during the second year.

The number of students permitted to enter the second year of the program is limited by the availability of field placement openings in local agencies. Selection will take place during the spring semester of the Freshman year. Students who do not qualify can still complete A.A. degree requirements within the normal two-year period. For further details inquire at the Liberal Arts Division office in Titchener Hall (Room 121).

FIRST YEAR

			Credits
ENG	110	Written Expression I	3
MAT		(MAT 124 Statistics recommended)	3-4
HIS	100	Rise of the West Laboratory Science (BIO 131 Human Biology I recommended)	3
PSY	110	General Psychology	4
PED		Physical Education Elective	3
			1
			17-18

Spring Semester

ENG	120	Written Expression II	3
SOC	110	Introduction to Sociology Laboratory Science (BIO 132 Human Biology II recommended)	3
HIS	186	Modern American Social History	4
		Liberal Arts Elective or Mathematics	3
PED		Physical Education Elective	3
			1
			17

SECOND YEAR

Fall Semester

			Credits
PSY	223	Intelligence and the Mentally Retarded	3
PSY	217	Counseling and Interviewing	3
		English or Humanities Elective	3
SOS	288	Seminar in Community Social Service Organizations	3
		†Liberal Arts Elective	3
			15

Spring Semester

PSY	227	Behavior Modification	3
PSY	214	Abnormal Psychology	3
		†Liberal Arts Elective	3
SOS	290	Social Science Field Work*	3
PHI		Philosophy elective	3
			15

*This internship experience generally involves 6 hours a week in one of the following agencies—Binghamton Psychiatric Center, Broome Developmental Center, Association for Retarded Children, Broome County Social Services, Broome County Juvenile Aid Bureau, Broome County Office for the Aging, Binghamton Outreach Program, PROBE, American Red Cross, Planned Parenthood, Wilson Memorial Hospital Extended Care.

†Students receiving credit for SOS 150 Introduction to Human Service Work may be able to use those credits for 6 of the 12 required in the program from Liberal Arts electives. These electives may not be used in any other program.



Instructor explains use of a Computer Aided Numerical Control (CNC) Lathe to a student.

MECHANICAL ENGINEERING TECHNOLOGY

DEPARTMENT CHAIRMAN, Appointment Pending
Mechanical Building, Room 117
Telephone 771-5023

The continuing thrust for faster and more economical manufacturing methods, more reliable systems and the need for new, clean and consistent sources of energy has generated an increased demand for mechanical engineering technicians with a high degree of technical competence.

The curriculum outline of courses encompasses a blend of mathematics, science, English, social science and technical specialties conceived to generate the necessary background for a variety of entry positions in Mechanical Engineering Technology. These entry positions usually align closely with and support mechanical engineering or related functions.

Recent graduates have been employed in areas of design-drafting, product design, quality control, metallurgy, heat-power, purchasing, sales, technical writing and system

maintenance. Job opportunities exist both locally and nationally, and starting salaries for 1982 graduates ranged between \$19,700 and \$12,500 with an average of \$16,661.

Recruitment of graduates for employment by companies large and small is active year-round. Mechanical Engineering Technology is a particularly lucrative field for the female. Although few have ventured into the field, those who have are highly successful.

This curriculum is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

State University of NY at Binghamton offers an ABET-accredited Bachelor of Technology program, for which the normal admission requirement is an AAS degree in an engineering technology discipline, such as Mechanical Engineering Technology.

FIRST YEAR Fall Semester

	Hours per Week		Credits per Semester
	Class	Lab	
EGR 110 Introduction to Technologies	1	0	1 $\frac{1}{2}$
*MAT 141 Algebra and Trigonometry	4	0	4
MET 113 Engineering Drawing I	1	2	2
MET 121 Manufacturing Processes I	2	2	3
PHY 141 Physics	3	2	4
ENG 110 Written Expression I	3	0	3
Social Science Elective	3	0	3
	17	6	19 $\frac{1}{2}$

Spring Semester

*MAT 142 Applied Calculus I	4	0	4
MET 114 Engineering Drawing II	1	2	2
MET 122 Manufacturing Processes II	1	3	2
MET 132 Applied Mechanics	4	0	4
PHY 142 Physics	3	2	4
ENG 150 Technical Writing	3	0	3
	16	7	19

SECOND YEAR Fall Semester

CST 122 Scientific Computer Programming—FORTRAN	2	2	3
EET 183 Electricity	2	3	3
MET 235 Strength of Materials	2	3	3
MET 241 Fluid Mechanics and Thermodynamics	2	3	3
MET 261 Engineering Statistics, Quality Control and Reliability	2	2	3
Social Science Elective	3	0	3
	13	13	18

Spring Semester

EET 186 Electronics	2	3	3
MET 238 Mechanical Design	3	3	4
MET 252 Engineering Materials and Industrial Processes	3	3	4
MET 244 Thermodynamics	2	3	3
†Technical Elective	(2-3)	(2-0)	(3)
	10-13	12-14	14-17

*Or MAT 163-164 Calculus with Analytic Geometry I and II.

†Waiver of the elective is possible only with the approval of the Department Chairperson. It is not a degree requirement.

GRADUATION REQUIREMENT: 70 $\frac{1}{2}$ CREDITS

MARKETING PROGRAMS

Leading to Associate in Applied Science Degree on Page 34.

MEDICAL ASSISTANT

DEPARTMENT CHAIRPERSON, Mary Schum
Cecil C. Tyrrell Library, 2nd Floor, Room 210
Telephone 771-5128

FIRST YEAR Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BIO	131	Human Biology I	3	2	4
ENG	110	Written Expression I	3	0	3
MDA	102	Medical Assisting Science	2	0	2
MDA	114	Standard First Aid and Personal Safety; Management of Emergencies	0	2	1
MRT	105	Medical Terminology	2	0	2
*SEC	101	or 102 Typewriting	2	3	3
†HSV	101	Cardio-Pulmonary Resuscitation	0	1	½
			12	8	15½

*Based on placement test

†This course will average out to one hour per week over the semester, but it will probably be given in clusters of 3 hours each in the evening or of 7½ hours each on Saturday to make a total of 15 hours.

Spring Semester

BIO	132	Human Biology II	3	2	4
MDA	115	Medical Assisting Procedures	3	2	4
MRT	106	Medical Correspondence and Communications	0	4	2
MRT	115	Medical Terminology	2	0	2
SPK	102	Effective Speaking or	3	0	3
ENG	120	Written Expression II			
			11	8	15

SECOND YEAR Fall Semester

BIO	160	Microbiology	2	3	3
MDA	206	Medical Office Management	3	3	4
MDA	208	Medical Law, Ethics and Economics	3	0	3
#MDA	211	Medical Assisting Procedures	2	4	4
PSY	110	Psychology	3	0	3
			13	10	17

Spring Semester

MDA	201	Medical Assisting Procedures	2	4	4
MDA	245	Directed Practice	1	16	5
MDA	210	Pharmacology	2	0	2
SOC	110	Introduction to Sociology	3	0	3
			8	20	14

#It is strongly recommended that this course be taken the semester before MDA 245 Directed Practice.



Medical Assistant students preparing syringes to practice injection techniques in the Medical Assistant Procedures Laboratory.

A Medical Assistant is one of the most versatile of all the allied health professionals. There is a variety of job opportunities available for individuals with associate degrees. These are in physicians' offices, medical centers, clinics, hospitals, armed services, laboratories and pharmaceutical companies. One can also find employment in public, industrial, school, and correctional health departments, as well as in the fields of research, publishing and teaching. A medical assistant can continue education in such fields as allied health services, health care management, and teaching. The program is designed to enable graduates to do both administrative assisting and clinical/laboratory assisting.

By studying such specifically related subjects as medical assisting procedures, clinical laboratory procedures and human biology, students can acquire the knowledge and techniques to prepare patients for examinations and assist the physician. These courses also prepare them to perform not only routine medical procedures but also electrocardiography, audiography, urinalysis and hematological tests.

Courses in medical terminology, typewriting, transcription and medical office management prepare the student to conduct the business and administrative duties. English, social sciences, psychology and medical law are included to provide a general background.

Directed Practice supplements the campus segment of the curriculum as senior students participate in an externship program that requires a working experience in physicians' offices or other health care facilities.

The curriculum is accredited by the Committee on Allied Health Education and Accreditation in collaboration with the American Medical Association (AMA) and the American Association of Medical Assistants (AAMA). Graduates are awarded the Associate in Applied Science degree and may elect to take an examination given by the AAMA to become Certified Medical Assistants. This CMA status is recognized throughout the country and can lead to better job opportunities and higher salaries.

Starting salaries of graduates of the program in 1982 averaged over \$9,000 and ranged between \$11,000 and \$7,800, and fringe benefits often include free medical care including medications.

MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BIO 131	Human Biology I	.....	3	2	4
CHM 131	Chemistry	.....	3	3	4
ENG 110	Written Expression I	.....	3	0	3
MAT 124	Statistics	.....	3	0	3
MLT 111	Introduction to Clinical Laboratory Methods and Practices	.....	1	2	2
†HSV 101	Cardio-Pulmonary Resuscitation	.....	0	1	½
			13	8	16½

†This course will average out to one hour per week over the semester, but it will probably be given in clusters of 3 hours each in the evening or of 7½ hours each on Saturday to make a total of 15 hours.

Spring Semester

BIO 132	Human Biology II	.....	3	2	4
BIO 150	Microbiology I	.....	3	3	4
CHM 132	Chemistry	.....	3	3	4
MLT 112	Hematology	.....	2	4	3
ENG 120	Written Expression II or	.....	3	0	3
SPK 102	Effective Speaking	.....		
			14	12	18

Summer Term

*Summer Clinical Laboratory of 4 weeks

SECOND YEAR Fall Semester

CHM 221	Organic Chemistry	.....	2	3	3
MLT 211	Clinical Chemistry I	.....	2	6	4
MLT 251	Diagnostic Microbiology	.....	3	4	4
PHY 117	Physics	.....	2	2	3
	Social Science Elective	.....	3	0	3
			12	15	17

Spring Semester

CHM 222	Organic Chemistry	.....	2	3	3
CHM 224	Instrumental Analysis	.....	2	6	4
MLT 212	Clinical Chemistry II	.....	2	6	4
MLT 232	Immunology and Immunohematology	.....	3	2	4
	Social Science Elective (ECO 107 Medical Economics and Law recommended)	.....	3	0	3
			12	17	18

Summer Term

*Summer Clinical Laboratory of 8 weeks.

*Satisfactory completion of Summer Clinical Laboratory experience is
REQUIRED FOR GRADUATION.

DEPARTMENT CHAIRPERSON, Julia Peacock
901 Front Street
Telephone 771-5151

The demand for medical laboratory technicians continues, with the majority finding employment in hospital clinical laboratories and in analytical, control and research laboratories of chemical and pharmaceutical companies. Others are employed as research assistants at large universities and still others have continued their higher education toward the baccalaureate in this field at a four-year college or university.

To provide the background necessary for work in these areas, the program includes courses in chemistry, physiology, microbiology, urinalysis, immunology, bloodbanking and physics.

Extensive laboratory work in bio-analytical procedures, chemical instrumentation, microbiological and serological techniques and radiation physics helps to develop the skill

needed for a wide range of job opportunities.

Work in the sciences is balanced by a program in general education including social sciences, English, and mathematics.

Satisfactory completion of 12 weeks of summer clinic experience is required. While there is no salary or direct credit associated with this experience, it is a vital and integral part of the students' educational experience.

Graduates of this program have been successful in finding employment in hospitals and industry or in transferring to 4-year colleges in recent years.

This program has been granted in-progress status in connection with its application for accreditation by the National Accrediting Agency for Clinical Laboratories (NAACLS).

Medical Laboratory Technology students use pipets in an analytical procedure in a chemistry laboratory.





Faculty member working with students on the proper filing of medical records in the College's Medical Record Laboratory.

A medical record is the permanent report of a person's illness or injury kept to preserve information of medical, scientific and legal value. The record includes all medical reports which describe how the patient's illness was diagnosed and treated. Medical records are needed to help doctors diagnose and treat future illness, to verify insurance claims, to plan hospitals, to inform the public health officials, and to aid researchers.

The medical record technician works in the medical record department of a hospital, clinic, nursing home, school of veterinary medicine or other health facility and is responsible for many aspects of preparing, analyzing and preserving health information needed by the patients, by the hospital and by the public. The duties include reviewing medical records for completeness and accuracy and also translating diseases and operations into the proper coding symbols.

Other duties include filing medical records, preparing records for micro-filing, typing reports of operations, X-rays and laboratory examinations, as well as histories, physical examinations and discharge summaries, compiling statistics of many

kinds, assisting the medical staff by preparing special studies and tabulating data from records for research. Supervising the day-to-day operation of a medical record department, taking records to court and maintaining the flow of health information are also parts of the total work picture.

Practice in the college medical record laboratory as well as in medical record departments of cooperating hospitals and other health care facilities, either within or outside the area, provides opportunities for additional educational experience which is the vital core of the program.

This curriculum is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association and by the American Medical Record Association. Students in this program are eligible to take the Medical Record Accreditation Examination following graduation and upon completion receive the title of Accredited Record Technician (ART). Salaries for 1982 graduates ranged from \$12,000 to \$8,300 with an average of \$10,147. Graduates can continue medical record education toward a baccalaureate degree at four-year colleges.

MEDICAL RECORD TECHNOLOGY

DEPARTMENT CHAIRPERSON, Mary Rosato
Business Building, Room 031
Telephone 771-5051

FIRST YEAR Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BIO	131	Human Biology I	3	2	4
ENG	110	Written Expression I	3	0	3
MRT	101	Medical Record Science	2	2	3
MRT	105	Medical Terminology	2	0	2
SEC	101	A, B Typewriting (Each is a 5-week course)	2	3	2
SOC		Social Science Elective	3	0	3
†HSV	101	Cardio-Pulmonary Resuscitation	0	1	½
			15	8	17½

†This course averages out to one laboratory hour per week over the entire semester, but it will probably be given in clusters of 3 hours each in the evening or of 7½ hours each on Saturday to make a total of 15 hours.

Spring Semester

BIO	132	Human Biology II	3	2	4
MRT	107	Medical Transcription	0	4	2
MRT	110	Medical Record Science	2	4	4
MRT	115	Medical Terminology	2	0	2
SPK	102	Effective Speaking	3	0	3
SOC		Social Science Elective	3	0	3
			13	10	18

Summer Term

*MRT 144 Directed Practice . . . 40 Hours per week for 4 weeks—4 Credits

SECOND YEAR Fall Semester

CST	110	Introduction to Data Processing	3	0	3
BIO	140	Pathophysiology	3	0	3
MRT	202	Medical Record Science	2	2	3
MRT	208	Advanced Medical Transcription	1	2	2
MRT	236	Quality Assurance	1	2	2
			10	6	13

Spring Semester

MRT	210	Medical Record Science	2	2	3
*MRT	245	Directed Practice	0	16	4
MRT	295	Medical Record Seminar	2	0	2
MRT	222	Medical Legal Aspects	3	0	3
MRT	216	Clinical Practicum	0	2	1
			7	20	13

*GRADUATION REQUIREMENT



Nursing student working with a patient at one of the participating community hospitals.

DEPARTMENT CHAIRPERSON, Sarah Hannaway
901 Front Street
Telephone 771-5060

Broome Community College offers a two-year, college-based curriculum to prepare graduates for immediate entrance into the first level of registered nursing. Graduates of this curriculum are eligible to take the New York State licensing examination for registered nurses. They are qualified for immediate employment in bedside nursing care, or they may wish to continue their education for the baccalaureate and higher degrees in the nursing field. The 1982 graduates of this program averaged \$14,291 in their starting salaries, which ranged from \$21,900 to \$10,500.

The curriculum operates as a college program, with classes and

laboratories held on the campus. Clinical instruction is in the cooperating hospitals of the Triple Cities. The clinical experiences, which are an integral part of the Nursing curriculum, include caring for individuals in all age groups, as well as observation periods in community health and welfare agencies.

Enrollment in the Nursing curriculum requires that each student have a completed health form submitted to the Department Chairperson prior to the first clinical assignment.

Mature men and women are encouraged to enter this program along with recent high school graduates, whether they are married or single.

This program is accredited by the National League for Nursing.

OFFICE SERVICES ASSISTANT PROGRAM
Leading to Associate in Applied Science Degree
on page 56

GENERAL OFFICE CERTIFICATE PROGRAM
on page 57

NURSING

FIRST YEAR Fall Semester

			Hours per Week		Credits
			Class	Lab	per Semester
*ADN	100	Meeting Basic Human Needs	5	6	7
BIO	131	Human Biology I	3	2	4
ENG	110	Written Expression I	3	0	3
PSY	110	General Psychology	3	0	3
†HSV	101	Cardio-Pulmonary Resuscitation	0	1	½
			14	9	17½

†This course will average out to one hour per week over the semester, but it will probably be given in clusters of 3 hours each in the evening or of 7½ hours each on Saturday to make a total of 15 hours.

Spring Semester

*ADN	101	Nursing Care During the Life Cycle	5	6	7
ADN	298	Nursing Seminar III	1	0	0
BIO	132	Human Biology II	3	2	4
ENG	120	Written Expression II	3	0	3
SOC	110	Introduction to Sociology	3	0	3
			15	8	17

SECOND YEAR Fall Semester

*ADN	203	Immobility Concepts	3	4½	4
*ADN	204	Regulatory Concepts	3	4½	4
*ADN	205	Psychological Concepts I	1	3	2
ADN	296	Nursing Seminar I	0	2	1
ADN	298	Nursing Seminar III	1	0	0
BIO	150	Microbiology I	3	3	4
		Free Elective	3	0	3
			14	17	18

Spring Semester

*ADN	206	I, I and O Concepts	3	4½	4
*ADN	207	Oxygenation Concepts	3	4½	4
*ADN	208	Psychological Concepts II	1	3	2
ADN	297	Nursing Seminar II	0	2	1
		Free Elective	3	0	3
			10	14	14

*Clinical experiences for Nursing students may be scheduled during evening hours on their regular laboratory days, and multi-media laboratory hours are required for these courses.

NOTE—Each student enrolled in Nursing is expected to meet the Mathematics proficiency requirement request guidelines from the Department Chairperson.

FIRST YEAR Fall Semester

Fall Semester			Credits per Semester		
			Class	Lab	
BIO	131	Human Biology I	3	2	4
ENG	110	Written Expression I	3	0	3
RAD	100	Introduction to Radiologic Technology			2
		First half-semester	2	0	
		Second half-semester	0	16	
RAD	101	Radiologic Technology I	3	1	3
RAD	103	Positioning I	0	3	1
RAD	110	Methods of Patient Care	2	1	2
RAD	115	Radiation Protection	1	0	1
†HSV	101	Cardio-Pulmonary Resuscitation	0	1	½
			12-14	8-24	16½

†This course will average out to one hour per week over the semester, but it will probably be given in clusters of 3 hours each in the evening or of 7½ hours each on Saturday to make a total of 15 hours.

WINTER TERM I

*RAD 131 Clinical Education I (40 hours per week)

Spring Semester

BIO	132	Human Biology II	3	2	4
ENG	120	Written Expression II	3	0	3
PHY	117	Physics	2	2	3
RAD	102	Radiologic Technology II	3	0	3
RAD	104	Positioning II	0	3	1
RAD	132	Clinical Education II	0	16	2
			11	23	16

SUMMER TERM I

*RAD 133 Clinical Education III 0 40 3

SECOND YEAR Fall Semester

PSY	110	General Psychology	3	0	3
RAD	203	Positioning III	0	3	1
RAD	210	Radiologic Physics	4	0	4
RAD	220	Radiologic Pathology	2	0	2
RAD	230	Clinical Education IV	0	16	2
		Social Science Elective	3	0	3
			12	19	15

WINTER TERM II

*RAD 231 Clinical Education V (40 hours per week)

Spring Semester

RAD	216	Imaging Modalities	1	0	1
RAD	225	Special Radiographic Procedures	3	2	4
RAD	232	Clinical Education VI	0	16	2
RAD	245	Radiobiology	2	0	2
RAD	250	Image Assessment	2	1	2
RAD	295	Seminar in Radiography	2	0	2
			10	19	13

SUMMER TERM II

*RAD 233 Clinical Education VII 0 40 3

*Successful achievement is a **GRADUATION REQUIREMENT**

RADIOLOGIC TECHNOLOGY

DEPARTMENT CHAIRPERSON, Nancy Button
Business Building, Room 023
Telephone 771-5070

Because 2200 hours of clinical practice are required in this curriculum, freshman courses identified with the RAD designator will begin the week of registration, which is one week before the start of regular classes.

Radiologic Technology is a diverse profession. The radiographer must draw from the fields of communication, psychology, photography and the physical and biological sciences, while utilizing an investigative approach to perform the daily tasks.

The typical role of the radiographer consists of producing radiographs used in the diagnosis of disease and injury. The radiographer finds employment in hospitals, with doctors who maintain private practices, with government agencies, both civil and military, and in industry.

A radiographer may continue education in areas such as ultrasound, nuclear medicine, special radiographic procedures, departmental administration, research, education and radiation therapy.

The Radiologic Technology program at Broome Community College

consists of two academic years on campus and two summers in co-operating hospitals, the equivalent of 24 calendar months. The curriculum is an extremely active one, in which the student is responsible for maintaining academic requirements on campus as well as fulfilling the practical application of this theory at the cooperating hospitals.

The clinical experience is a viable part of the educational process. Upon completion of 2200 hours of clinical practice as well as the academic requirements of the program, the graduate is eligible to sit for the examination of the American Registry of Radiologic Technologists for certification and New York State licensure.

This curriculum is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association.

Faculty member discusses radiographs with students in the College's Radiology Laboratory.



ENGINEERING (INDUSTRIAL) SECRETARY OPTION

FIRST YEAR Fall Semester

		Hours per Week		Credits per Semester
		Class	Lab	
BUS 112	Business Mathematics	2	0	2
ENG 110	Written Expression I	3	0	3
†SEC 101	A,B,C Typewriting (Each is a 5-week course)			
	or	2	3	3
†SEC 102	A,B,C Typewriting (Each is a 5-week course)			
SEC 109	Basic Transcription	3	0	3
#SEC 110	or 111 Shorthand	2	3	3
	Liberal Arts Elective	3	0	3
SEC 130	Freshman Orientation	*	0	½
		*15½	6	17½

†SEC 101 and SEC 102 are modular courses, with each module 5 weeks long. Students will take the appropriate course, based on their records. Please refer to course descriptions.

*SEC 130 Freshman Orientation meets every other week for one hour

Spring Semester

ENG 120	Written Expression II	3	0	3
SEC 102	A,B,C Typewriting (Each is a 5-week course)	2	3	3
	or			
	Business Elective	(3)	(0)	(3)
#SEC 111	or 234 Shorthand	2	3	3
SEC 151	Business Communications	3	0	3
	Science Elective	2-3	2-0	3
		12-14	6-8	15

#Students will take the appropriate course, based on their records. Please refer to course descriptions.

SECOND YEAR Fall Semester

		Hours per Week		Credits per Semester
		Class	Lab	
BUS 100	Accounting I	4	0	4
SEC 234	Shorthand	2	3	3
	or			
	Business Elective	(3)	(0)	(3)
SEC 240	Office Practice	0	4	2
MET 129	Survey of Engineering Laboratories	2	2	3
	Social Science Elective	3	0	3
		11-12	6-9	15

Spring Semester

SEC 212	Technical Typewriting	2	2	3
SEC 242	Office Procedures	3	0	3
SEC 260	Model Office	0	4	2
	Business Elective	3	0	3
	Mathematics or Science Elective	3-4	0-3	3-4
ECO 110	or 111 Introduction to Micro or Macro-Economics	3	0	3
		14-15	6-9	17-18

SECRETARIAL SCIENCES

DEPARTMENT CHAIRPERSON, Chester J. Buglia
Business Building, Room 108
Telephone 771-5137

Broome Community College offers three options of study in Secretarial Sciences—Engineering Secretary, Executive Secretary, and Office Services Assistant. The department also offers a one-year certificate in General Office. Graduates of the options usually obtain immediate employment as stenographers, secretaries or office assistants. Graduates averaged \$8,958 in starting salaries in 1982, with a range from \$14,456 to \$6,240.

Engineering Secretarial students study engineering terminology to understand the specialized language of the engineer, and they are well prepared to work on engineering reports, records and correspondence.

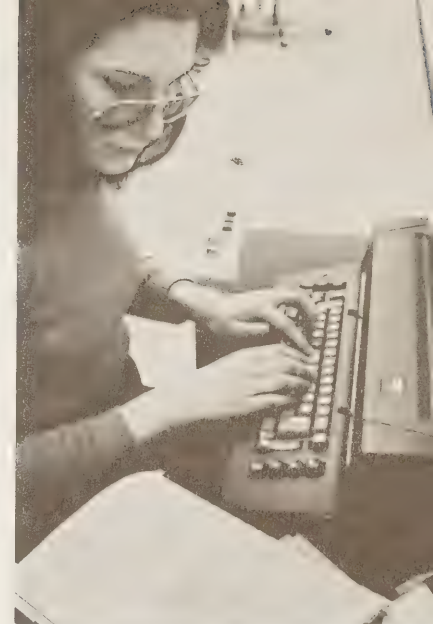
Executive Secretarial students study terminology in such fields as law, education, insurance, real estate, and investments so that they can understand the specialized language used in the professions, as well as in government and business firms.

Office Services Assistant students study a variety of courses including accounting, typing, office management, and personnel management. The graduates of the Office Services Assistant option should find employment in word processing centers and other areas of office service work.

Word processing is integrated into the current course offerings and culminates in the Model Office course.

The Secretarial Department faculty places the responsibility of class attendance upon the student, who should attend classes regularly and on time. If an employee does not show up for work, he/she can expect to be terminated. A student who does not attend classes can expect to fail.

Faculty will inform students of the College's and department's attendance policies. It is the student's



Secretarial Science student uses a memory typewriter in the Model Office.

responsibility to understand these policies. Whenever a faculty member feels that a student has been absent or tardy to the extent that it may be detrimental to the student's academic standing, the faculty member will inform the department chairperson, who in turn will meet with the student concerned for appropriate action.

Non-traditional students and part-time students should meet with the department chairperson for academic advisement prior to registering for classes. These students must refer to course descriptions to be certain they meet prerequisite requirements prior to registering for courses.

EXECUTIVE SECRETARY OPTION

FIRST YEAR Fall Semester

		Hours per Week		Credits per Semester
		Class	Lab	
BUS 112	Business Mathematics	2	0	2
ENG 110	Written Expression I	3	0	3
†SEC 101	A,B,C Typewriting (Each is a 5-week course)			
	or	2	3	3
†SEC 102	A,B,C Typewriting (Each is a 5-week course)			
SEC 109	Basic Transcription	3	0	3
#SEC 110	or 111 Shorthand	2	3	3
	Liberal Arts Elective	3	0	3
SEC 130	Freshman Orientation	*	0	½
		* 15½	6	17½

†SEC 101 and SEC 102 are modular courses, with each module 5 weeks long. Students will take the appropriate course, based on their records. Please refer to course descriptions.

*SEC 130 Freshman Orientation meets every other week for one hour

Spring Semester

ENG 120	Written Expression II	3	0	3
SEC 102	A,B,C Typewriting (Each is a 5-week course)	2	3	3
	or			
	Business Elective	(3)	(0)	(3)
#SEC 111	or 232 Shorthand	2	3	3
SEC 151	Business Communications	3	0	3
	Science Elective	2-3	2-0	3
		12-14	6-8	15

#Students will take the appropriate course, based on their records. Please refer to course descriptions.

SECOND YEAR Fall Semester

BUS 100	Accounting I	4	0	4
SEC 240	Office Practice	0	4	2
SEC 260	Model Office	0	4	2
SEC 232	Shorthand	2	3	3
	or			
	Business Elective	(3)	(0)	(3)
ECO 110	Introduction to Micro-Economics	3	0	3
	Mathematics or Science Elective	3-4	0-3	3-4
		12-14	8-14	17-18

Spring Semester

SEC 210	Executive Typewriting	2	2	3
SEC 242	Office Procedures	3	0	3
BUS 118	Business Law	3	0	3
SEC 261	Model Office	0	4	2
	or			
	Business Elective	(3)	(0)	(3)
	Social Science Elective	3	0	3
		11-14	2-6	14-15

OFFICE SERVICES ASSISTANT OPTION

FIRST YEAR Fall Semester

		Hours per Week		Credits per Semester
		Class	Lab	
BUS 100	Accounting I	4	0	4
BUS 112	Business Mathematics	2	0	2
†SEC 101	A,B,C Typewriting (Each is a 5-week course)			
	or	2	3	3
†SEC 102	A,B,C Typewriting (Each is a 5-week course)			
SEC 109	Basic Transcription	3	0	3
ENG 110	Written Expression I	3	0	3
SEC 130	Freshman Orientation	*	0	½
		* 14½	3	15½

†SEC 101 and SEC 102 are modular courses, with each module 5 weeks long. Students will take the appropriate course based on their records. Please refer to course descriptions.

*SEC 130 Freshman Orientation meets every other week for one hour

Spring Semester

BUS 101	Accounting II	4	0	4
SEC 102	A,B,C Typewriting (Each is a 5-week course)	2	3	3
	or			
	Business Elective	(3)	(0)	(3)
ENG 120	Written Expression II	3	0	3
SEC 151	Business Communications	3	0	3
	Science Elective	2-3	2-0	3
		14-16	0-5	16

SECOND YEAR Fall Semester

BUS 261	Office Management	2	0	2
ECO 110	Introduction to Micro-Economics	3	0	3
CST 110	Introduction to Data Processing	3	0	3
SEC 236	Machine Transcription	2	2	3
	Mathematics or Science Elective	3-4	0-3	3-4
	Business Elective	3	0	3
		16-17	2-5	17-18

Spring Semester

BUS 118	Business Law I	3	0	3
BUS 249	Principles of Personnel Management	3	0	3
ECO 111	Introduction to Macro-Economics	3	0	3
SEC 260	Model Office	0	4	2
SEC 242	Office Procedures	3	0	3
	Liberal Arts Elective	3	0	3
		15	4	17

TOOL AND DIE MAKING

PROGRAM COORDINATOR, Blaine Ellis
Mechanical Building, Room 117
Telephone 771-5000

The Tool and Die Making curriculum was conceived to help alleviate the extreme shortage of talent in the machining and tool and die making fields which exists today. Shortages are alleged to exist throughout the United States.

This curriculum is designed to provide the "Related Instruction" usually contained in the traditional industry-

based Tool and Die Apprentice Programs. In addition, the curriculum contains courses of instruction perceived by local industry to enrich the background of persons who desire entry to the machine trades and tool and die work.

A total of 1,095 hours is spent in classroom and laboratory activity. The entire block of hours is credited toward the required 8,000 hours for "journeyman" status.

Additional experience beyond classroom and laboratory work is ob-

tained at suitable industries. In order to qualify for state approved "journeyman" status, the industry where experience is obtained must be approved by the State of New York for apprentice training.

It is possible that some students will desire less academic experience than is offered by the complete cur-

riculum because of an interest in the machine trades. These desires can be fulfilled by taking the "Machinist Related Certificate" program

Satisfactory completion of the entire curriculum qualifies an individual for the Associate in Occupational Studies (AOS) Degree. Credits earned toward this degree are generally not considered for transfer

GENERAL OFFICE CERTIFICATE PROGRAM

Fall Semester

		Hours per Week		Credits
		Class	Lab	per Semester
†SEC 101	A,B,C Typewriting (Each is a 5-week course)			
	or	2	3	3
†SEC 102	A,B,C Typewriting (Each is a 5-week course)			
BUS 110	Introduction to Business	3	0	3
ENG 100	Basic Language Skills			
	or	3	0	3
ENG 110	Written Expression I			
	Elect 1 of the following:	3	0	3
PSY 100	Psychology of Personal Adjustment			
PSY 110	General Psychology			
SAC 101	The Individual in a Changing Environment			
SAC 295	Seminar in Human Potential			
SEC 109	Basic Transcription	3	0	3
SEC 130	Freshman Orientation	*	0	½
		*14½	3	15½

†SEC 101 and SEC 102 are modular courses, with each module 5 weeks long. Students will take the appropriate course based on their records. Please refer to course descriptions.

*SEC 130 Freshman Orientation meets every other week for one hour

Spring Semester

SEC 102	A,B,C Typewriting (Each is a 5-week course)	2	3	3
	or			
	Business Elective	(3)	(0)	(3)
SEC 151	Business Communications	3	0	3
SEC 246	Office Machines	2	3	3
SEC 248	Office Procedures	3	0	3
	Business Elective	3-4	0	3-4
		13-15	3-6	15-16

FIRST YEAR Fall Semester

		Hours per Week		Credits
		Class	Lab	per Semester
TDA 111	Blueprint Reading	3	0	3
TDA 113	Survey of Industrial Safety & First Aid	2	0	2
MAT 106	Basic Technical Mathematics I	3	0	3
TDA 114	Benchwork	2	0	2
MET 121	Manufacturing Processes I	2	2	3
MET 113	Engineering Drawing I	1	2	2
		13	4	15

Spring Semester

ENG 150	Technical Writing			
	or	3	0	3
ENG 110	Written Expression I			
MAT 107	Basic Technical Mathematics II	3	0	3
MET 114	Engineering Drawing II	1	2	2
MET 122	Manufacturing Processes II	1	3	2
TDA 120	Precision Measurement & Inspection	3	0	3
TDA 200	Metallurgy	1	2	2
ECO 104	Labor Economics & American Industry	3	0	3
		15	7	18

SECOND YEAR Fall Semester

TDA 130	Tool Grinding	1	2	2
TDA 140	Production Processes	3	0	3
BUS 255	Industrial & Labor Relations	2	0	2
TDA 132	Statics	2	0	2
TDA 261	Introduction to Quality Control and Inspection	3	0	3
MET 223	Manufacturing Processes III	1	2	2
BUS 252	Supervision of Personnel	2	0	2
		14	4	16

Spring Semester

TDA 248	Hydraulics & Pneumatics	2	2	3
EET 181	Installation and Maintenance of Electric Motors	1	2	2
TDA 250	Control Systems	3	0	3
TDA 230	Tool Design	4	0	4
TDA 235	Strength of Materials	3	0	3
		13	4	15

Part-Time Students

THE ADMINISTRATION OF CREDIT COURSES FOR PART-TIME STUDENTS—FORMERLY UNDER THE CENTER FOR CONTINUING EDUCATION—IS NOW THE RESPONSIBILITY OF THE OFFICE OF THE DEAN OF ACADEMIC SERVICES.

MEETING MANY NEEDS

People often think that higher education is available only for recent high school graduates. Broome Community College tries to reach out and meet the educational needs of ALL the people in Broome County. "Community" is part of the College's name and a large portion of its mission. BCC is concerned about meeting the needs of the part-time student, as well as those enrolled full time.

Anyone in the community may enroll as a part-time student, and BCC attracts a large number each year. The fall 1982 part-time enrollment, for example, was over 3,000 men and women, most of them for evening classes as they are largely adults who work during the day. In recent years the College has also increased its enrollment of part-time day students, and the total was about 500 last fall.

PART-TIME STUDENTS

are those who take fewer than 12 credits per semester, usually one or two courses. At BCC, part-time students can:

- Enroll in credit or non-credit mini courses.
- Take day or evening courses or both.
- Attend classes in the fall, spring or summer semester.
- Earn a degree or not, as they see fit. Certificate and diploma programs are also available.
- Apply for financial aid—if carrying 6 or more credits.
- Receive academic advice and personal counseling.
- Find other students over 21.
- Borrow books from the College Library.
- Carry one, two or three courses.
- Belong to the Evening Student Association.
- Receive Veterans' benefits.
- Transfer credits to BCC earned at another college.

NOTE— Many firms have a tuition-reimbursement plan that pays all or part of an employee's tuition and costs if his/her courses are job-related.

The College conducts a special Information Session for new part-time students at the beginning of the fall and spring semesters to inform prospective students what programs are available, how to register, how to get started at BCC, and to answer their many questions.

CREDIT/DEGREE PROGRAMS FOR EVENING PART-TIME STUDENTS

Broome Community College offers 21 degree programs which can be completed through part-time study. Most of the courses in these programs can be completed in evening or weekend study. On the following pages are displays for the following degree programs:

Associate in Applied Science

1. Business (Accounting Emphasis) . . . Page 61
2. Business (General Emphasis in Marketing Management and Sales) . . . Page 61
3. Child Care . . . Page 62
4. Criminal Justice . . . Page 61
5. Data Processing . . . Page 63
6. Data Processing—Technical . . . Page 63
7. Fire Protection Technology . . . Page 62
8. Individual Studies . . . Page 43
- Industrial Technology
9. Chemical Emphasis . . . Page 64
10. Civil Emphasis . . . Page 64
11. Computer Emphasis . . . Page 63
12. Electrical Emphasis . . . Page 64
13. Industrial Safety and Occupational Hygiene . . . Page 65
14. Mechanical Emphasis . . . Page 65
15. Production Management . . . Page 65
16. Paralegal Assistant . . . Page 66

Associate in Arts

17. Liberal Arts and Sciences . . . Page 66

Associate in Science

18. Liberal Arts—Science Option . . . Page 67
19. Liberal Arts—Mental Health and Retardation . . . Page 67
20. Individual Studies . . . Page 43

Associate in Occupational Studies

21. Tool and Die Making . . . Page 68

Additionally, the College sponsors several certificate and diploma programs. These are detailed on page 68.

ENROLLMENT

First-Time Enrollment

Those enrolling as part-time students for the first time at Broome Community College should be aware of the following services available to them:

- Information Sessions
- Registration and Advisement
- Financial Aid
- Veterans Benefits

THE INFORMATION SESSIONS are conducted prior to each term. At this time, one can learn about the College and its programs, how to register, how to schedule courses, and how to get answers to questions.

REGISTRATION IS REQUIRED. First-time students must register, in person or by mail. They must pay their tuition at the time they register in person, or when billed if registering by mail.

RESIDENCY REQUIREMENTS. See page 12.

Continued Enrollment

Those who are continuing their studies at the College as part-time students should always keep in close touch with their academic advisors and follow the procedure shown on pages 58 to 68 for their program of study, so that they do not overlook any courses they should take.

They also are eligible for the financial aid and veterans benefits of first-time, part-time students, and they have to comply with the same residency requirements. They must also register, either by mail or in person. Tuition must be paid at the time of registration, if in person, or when billed if registering by mail.

MATRICULATION

Part-time Day and Evening Students

The *All-Purpose Reminder Form* is used by the College for several procedures, one of which is matriculation into academic programs.

Students wishing to be admitted to part-time day or evening degree programs (with the exception of the Health Sciences) should fill out an *All-Purpose Reminder Form*. This form may be obtained in the Wales Building Room 111. Upon acceptance, the student will receive a formal letter of admission.

ADVISEMENT

Academic advisors are available during evening hours to accommodate the evening student population at Broome Community College.

Evening Part-time Students who are nearing the completion of their certificate, diploma or degree requirements or those who need to know the requirements for any degree program offered in the evening, should consult one of the academic advisors. Each advisor is prepared to handle questions concerning any degree program. There will be advisors available from Monday through Thursday evening in Room 207 of the Wales Building (no appointment necessary).

Day part-time Students seeking advisement should contact the chairpersons of their academic departments. They should also apply to their chairpersons when they are ready to receive their associate degrees.

All part-time students, with the exception of those in the Health Science areas, are matriculated through the Academic Advisement Office in Room 207 of the Wales Building. Health Science students are accepted through the Admissions Office.

TUITION

Part-time students are those who carry fewer than 12 credit hours. Tuition and fees are listed on pages 12 and 13.

FINANCIAL AID is available to part-time students who take 6 or more credits. Many companies have tuition reimbursement plans, and employees should familiarize themselves with their companies' policy. The College has a Financial Aid office in the Wales Building, Room 101 to answer questions about this. If one's company is paying, a letter to that effect should be brought to registration.

GRADUATION Evening Students Only

All awards for Degrees, Diplomas and Certificates for part-time students at Broome Community College are conferred in May. Evening students who expect to complete course requirements by May must declare their candidacy by filing an *All-Purpose Reminder Form* in Wales 111 prior to February 1 of that year. This will initiate an official review of the records and a formal letter of candidacy. The Registrar's Office will also be notified, and it will send out information in April pertaining to the awards ceremonies.



CREDIT FOR PRIOR LEARNING

Transfer Credits

- Courses completed at another college prior to enrolling at Broome Community College will be considered for transfer credits. The student, however, must initiate the request for this consideration.

- An official transcript must be on file for all students—part-time or full—prior to transcript review for transfer purposes.

Credit for Prior Non-Academic Experience

Credit may be given for life experiences or previous employment accomplishments. A number of methods exist for receiving this credit, and details are available from the Dean of Curriculum (Room 202, Wales Building).

Students may also find it advantageous to request credit by examination for a course in whose field they have previous experience. They can do this by taking a special examination. If they pass this test, they can receive "Credit by Examination" for the course and will not have to take it, thus saving the cost of tuition and the semester(s) involved. Taking this examination for credit requires payment of a fee for a non-laboratory course. If the course has a laboratory, an additional fee will be charged for the laboratory portion of the exam.

EVENING STUDENT ASSOCIATION

The Evening Student Association (ESA) provides the evening students with a means of planning, organizing and operating activities and organizations for the part-time student. It provides a basis for discussion and action on academic, cultural and social matters and affords evening students an opportunity to express their views on significant issues.

All evening students may be participating members and the ESA is a member of the United States Association of Evening Students and the Upstate New York Region. More information is available in Wales Building, Room 111.

Summer Session

Each summer Broome Community College offers several terms of summer sessions from 5 to 8 weeks long, in day and evening sections. An announcement of the Summer schedule and policies is available in April of each year.

Weekend Courses

In addition to a daily class schedule, the College also sponsors courses on Fridays, Saturdays and Sundays. Schedules are printed each semester.

DISPLAY OF CREDIT PROGRAMS

Following are displays of courses for the programs that the College offers to part-time students. Most of these are given in the evening, although some are day offerings. Students who pursue these programs should meet with their academic advisors or program coordinators to determine the best approach to meeting their individual needs.

The displays of courses in each curriculum are divided into three categories to assist the students in determining which courses to take and in what order.

Category 1 - "Introductory Courses" are entry-level courses in each program. They are frequently prerequisites for courses that must be taken later.

Category 2 - "Additional Courses for Diploma" are those which together with the introductory courses will satisfy the requirements for the curriculum diploma. The diploma is about the mid-point for the attainment of an associate degree.

Category 3 - "Remaining Courses for Degree" lists the additional courses required for the completion of the associate degree.

Students should always consult with their advisors, as sometimes special course consideration is possible.

ASSOCIATE IN APPLIED SCIENCE—BUSINESS

ACCOUNTING EMPHASIS

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses		Credits
BUS 100 Accounting I		4
BUS 101 Accounting II		4
BUS 112 Business Mathematics		2
BUS 118 Business Law I		3
ENG 110 Written Expression I		
or ENG 100 Basic Language Skills		3
Additional Courses for Diploma		
BUS 157 Report Writing		3
Liberal Arts Elective		3
Accounting Courses		10
		<hr/> 32

Remaining Courses for Degree

Accounting Courses	8
†Business Related Courses	8
Social Sciences	6
English Elective	3
BUS 221 Math for Business Analysis	
or BUS 115 Business Statistics	2-3
PHS 111 Physical Science for Today	3
Math or Science Elective	3-4
AAS Business (Accounting Emphasis)	
Minimum Semester Credits	<hr/> 65-67

†Business related courses from BUS, CST, MAT, MET or SEC course numbers as approved by the Academic Advisor for Business.

Business students who have taken courses through AIB, LOMA, or other recognized national programs of study and examination should apply to the Academic Advisor for consideration or credit.

GENERAL EMPHASIS

(MARKETING MANAGEMENT AND SALES)

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses		Credits
BUS 100 Accounting I		4
BUS 101 Accounting II		4
BUS 112 Business Mathematics		2
BUS 118 Business Law I		3
ENG 110 Written Expression I or		
ENG 100 Basic Language Skills		3
Additional Courses for Diploma		
BUS 157 Report Writing		3
Liberal Arts Elective		3
Business Courses (see below)		10
		<hr/> 32

Remaining Courses for Degree

Business Courses (see below)	8
Business Related Courses (see below)	8
Social Sciences	6
English Elective	3
BUS 115 Business Statistics	
or BUS 221 Math for Business	2-3
Analysis	
PHS 111 Physical Science for Today	3
Math or Science Elective	3-4
AAS in Marketing Management	
and Sales	
Minimum Semester Credits	<hr/> 64-65

Suggested Management Electives: BUS 141, BUS 150, BUS 224, BUS 243, BUS 246, BUS 252, BUS 255, BUS 256, BUS 257, BUS 258, BUS 261, BUS 270, BUS 360, BUS 361, BUS 362.

Suggested Sales Electives: BUS 120, BUS 129, BUS 131, BUS 141, BUS 147, BUS 152, BUS 154, BUS 226, BUS 238, BUS 247.

NOTE: A number of choices exist in The Business—General Emphasis Diploma Program. By carefully selecting the proper Business courses, students can generate a concentration in a particular area, such as Sales, Retailing or Management. To identify these courses, students should discuss their interests with their academic advisor.

The courses completed to earn the diploma are acceptable as credits toward an Associate in Applied Science degree in Marketing Management and Sales.

A.A.S.—CRIMINAL JUSTICE

This program is designed for individuals considering employment upon graduation or for those already employed in the Criminal Justice field. Students intending to transfer for advanced degrees are advised to pursue the Criminal Justice option in Liberal Arts (see page 47)

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses		Credits
ENG 110 Written Expression I		
or ENG 100 Basic Language Skills		3
SOC 110 Introduction to Sociology		3
Criminal Justice Elective		3
CRJ 101 Intro. to Criminal Justice		3
Additional Courses for Diploma		
PSY 110 General Psychology		3
SPK 102 Effective Speaking		3
POS 201 The American Political		
System or POS 204 American		
State & Local Government		3
Sociology Elective		3
Psychology Elective		3
Criminal Justice Courses		6
		<hr/> 33

Remaining Courses for Degree

Lab Science or Math or Combination	6
Philosophy Elective	3
Free Electives (any field: Social Science	
recommended)	6
Criminal Justice Courses	12
AAS Criminal Justice Minimum	
Semester Credits	<hr/> 60

Credit for academy training will be considered after admission to candidacy on the basis of about one credit per 40 or one credit per 50 contact hours, with option to receive transfer credit for other Criminal Justice related programs up to 12 credits total. The requirement will be that the individual must provide documentation of attendance and relevancy of work.

More Information:

Francis J. Short, Chairman, Phone 771-5087
William F. Michalek, Coordinator

ASSOCIATE IN APPLIED SCIENCE—CHILD CARE

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
PSY 110 General Psychology	3
PSY 211 Child Development	3
CDC 100 Introduction to the Education of Young Children	3
ENG 110 Written Expression I	3
CDC 120 Curriculum Development	3
Additional Courses for Diploma	
SOC 110 Introduction to Sociology	3
CDC 200 Social Psychology of Education	3
Child Care Electives (see list at right)	9
	30

Remaining Courses for Degree	
English/Literature	3
Humanities Elective (see list at right)	3
Math or Science Elective (see list at right)	6-8
Child Care Electives (see list at right)	3
CDC 170 Practicum I	3
CDC 290 Practicum II	6
Related Approved Electives (see list at right)	6
AAS Child Care Minimum Semester Credits	60-62

More Information:

Marilyn Schafer, Program Coordinator, Francis J. Short, Chairman. (Phone 771-5087).

CDC Electives:

Students may select 12 hours of courses designated for Child Care, such as CDC 115, CDC 140, CDC 150, CDC 160, CDC 210, CDC 220, CDC 230, CDC 250, LIT 263

Related Electives:

Students may elect 6 hours from the Related Approved Electives from the following: PSY 103, PSY 212, PSY 214, PSY 217, PSY 220, PSY 227, SOC 230, SOC 210, SOC 234, or from other disciplines with permission.

Elective Areas:

Suggested Humanities—select from English, Languages, Fine Arts, Philosophy, Speech (SPK 102 recommended)

Math or Science—select from Math, Biology, Chemistry, Physics, Physical Science (MAT 113, BIO 131, CHM 120 recommended)

A.A.S.—FIRE PROTECTION TECHNOLOGY

The Fire Protection Technology Program is designed to provide fire fighters and related fire service personnel with specialized training. The curriculum has been developed by a local advisory committee to meet the needs of the area, and specialized courses as well as general education courses constitute the degree program. Specialized courses include Fire Fighter Tactics and Strategy, Arson Investigation, Hydraulics, Hazardous Materials, Fire Prevention, and Building Construction.

This program is open to both paid and volunteer fire fighters of the community, as well as those persons in related firematic areas.

More Information:

Francis J. Short, Chairman (Phone 771-5087)
Anthony Winkler, Program Coordinator

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
ENG 110 Written Expression I	3
Fire Protection Courses	9
Additional Courses for Diploma	
SPK 102 Effective Speaking	3
Mathematics or Science Elective (see list at right)	3-4
Chemistry (see list at right)	3
Social Sciences (see list at right)	3
Fire Protection Courses	6
	30-31

Remaining Courses for Degree

Fire Protection Courses	6
Social Sciences (see list at right)	3
Health (see list at right)	3
Management (see list at right)	6
Electives (see list at right)	12
AAS Fire Protection Technology Minimum Semester Credits	60-61

Chemistry: Suggest CHM 120

Mathematics: Suggest MAT 139 (4 Credits)

Social Sciences: Choose from History, Anthropology, Sociology, Psychology, Political Science, Economics.

Health: Advanced First Aid Emergency Medical Technician Programs or equivalent may be submitted for approval.

Fire Protection Courses: Select from FRS 101, FRS 103, FRS 105, FRS 107, FRS 108, FRS 200, FRS 201, FRS 205, FRS 210, FRS 250, FRS 299.

Management: Suggest BUS 245, BUS 246, BUS 258, BUS 262, BUS 150.

Electives: Courses with FRS, SAF, MAT designators, CHM 121, CHM 290 or other courses with permission.

ASSOCIATE IN APPLIED SCIENCE (COMPUTER OFFERINGS)

DATA PROCESSING

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses		Credits
BUS 100 Accounting I		4
CST 111 Introduction to Computer Studies		3
CST 115 Problem Solving with Pascal		3
ENG 110 Written Expression I		3
Remaining Courses for Degree		
BUS 101 Accounting II		4
BUS 115 Business Statistics or MAT 124 Statistics		3
CST 100 BASIC		1
CST 118 COBOL		3
ENG 120 Written Expression II		3
MAT 121 Finite Math		3
SPK 100 Basic Speaking or SPK 102 Effective Speaking		2-3
BUS 157 Business Report Writing		3
CST 116 RPG II		3
CST 218 Advanced COBOL		3
PHS 111 Physical Science for Today		3
2 Social Science Electives		6
BUS 270 Decision Making		3
CST 120 FORTRAN (Business) or CST 122 FORTRAN (Technical)		3
CST 200 Systems Analysis		3
CST 217 Advanced RPG II		3
AAS Data Processing		
Minimum Semester Credits		62-63

More Information:

For all computer offerings it is recommended that applicants or students contact Mary Diegert, the department chairperson.

INDIVIDUAL STUDIES
(Associate in Applied Science
or Associate in Science Degrees)
See page 43.

DATA PROCESSING—TECHNICAL

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses		Credits
ENG 110 Written Expression I		3
CST 111 Intro. to Computer Studies		3
CST 115 Problem Solving with Pascal		3
MAT 124 Statistics		3
Laboratory Science Sequence		4
Remaining Courses for Degree		
PHI 202 Logic		3
CST 122 FORTRAN (Technical)		3
ENG 150 Technical Writing		3
MAT 153 Discrete Math I		4
Laboratory Science Sequence		4
CST 112 Computer Logic		3
CST 126 Assembler—BAL		3
CST 205 Advanced FORTRAN with Graphics		3
MAT 154 Discrete Math II		4
2 Social Science Electives		6
CST 202 Data Structures		3
CST 220 Intro. to Microprocessors		3
CST 222 Topics in Computer Systems		3
SPK 102 Effective Speaking		3
AAS Data Processing—Technical		64
Minimum Semester Credits		

INDUSTRIAL TECHNOLOGY

Computer Emphasis

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses		Credits
ENG 110 Written Expression I		3
MAT 139 Algebra		4
CST 111 Intro. to Computer Studies		3
CST 115 Problem Solving with Pascal		3
Additional Courses for Diploma		
CST 122 FORTRAN (Technical)		3
CST 112 Computer Logic		3
MAT 140 Trigonometry		4
2 Computer Electives		6
MAT 121 Finite Math or MAT 153 Discrete Math I		3-4
		32-33
Remaining Courses for Degree		
CST 200 Systems Analysis		3
CST 220 Intro. to Microprocessors		3
Lab Science Sequence		8
English Elective		3
Social Science Electives		6
3 Approved Electives		9
AAS Industrial Technology (Computer Emphasis)		
Minimum Semester Credits		64-65



ASSOCIATE IN APPLIED SCIENCE— INDUSTRIAL TECHNOLOGY

CHEMICAL EMPHASIS

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
MAT 139 Algebra	4
CHM 145 Chemistry	4
English Electives (see list below)	3
Additional Courses for Diploma	
CHM 146 Chemistry	4
CHM 291 Organic Chemistry I	3
CHM 292 Organic Chemistry II	3
PHY 141 Physics	4
MAT 140 Trigonometry	4
CST 122 Computer Programming— FORTRAN (Technical)	3
	32

AAS DEGREE IN INDUSTRIAL TECHNOLOGY (COMPUTER EMPHASIS) See page 63.

CIVIL EMPHASIS

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
MAT 139 Algebra	4
MAT 140 Trigonometry	4
English Elective (see list at right)	3
PHY 141 Physics	4
Additional Courses for Diploma	
MET 132 Mechanics	4
CIV 155 Surveying	3
CIV 156 Route Surveying	4
CIV 159 Architectural Drafting I	3
CIV 228 Estimating and Construction Planning	3
	32

Remaining Courses for Degree

PHY 142 Physics	4
CHM 293 Analytical—Instrumental Chemistry I	3
CHM 294 Analytical—Instrumental Chemistry II	3
English Electives (see list below)	3
Social Science Electives (see list below)	6
Approved Technical Science Electives (see list below)	13
AAS Industrial Technology (Chemical Emphasis) Minimum Semester Credits	64
The following may be taken as approved technical/science courses to meet degree requirements: CHM 296, CHM 297, CHM 298, MAT 163, MAT 164, CST 130, EET 111, EET 112, EET 125, EET 126, CIV 260, MET 245, MET 261, BIO 111, BIO 112	
Suggested English Courses: ENG 100, ENG 110, ENG 120, ENG 150, SPK 102	
Suggested Social Science Courses: ECO 110, ECO 111, PSY 110, SOC 110, SOS 130	

Remaining Courses for Degree

PHY 142 Physics	4
MET 235 Strength of Materials	3
English Elective (see list below)	3
Social Science Electives (see list below)	6
Approved Technical Electives (see list below)	16
AAS Industrial Technology (Civil Emphasis) Minimum Semester Credits	64
The following may be taken as approved technical elective courses to meet degree requirements: CIV 160, CIV 161, CIV 163, CIV 251, CIV 252, CIV 255, CIV 257, CIV 260, CIV 262, CIV 264, CIV 266, CIV 268, CST 122, MAT 163, MAT 164, EET 111, EET 112, CAD 200.	
Suggested English Courses: ENG 100, ENG 110, ENG 120, ENG 150, SPK 102	
Suggested Social Science Courses: ECO 110, ECO 111, ECO 104, ECO 120, PSY 100, PSY 110, SOC 110, SOS 130	

ELECTRICAL EMPHASIS

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
MAT 139 Algebra	4
MAT 140 Trigonometry	4
EET 125 Circuits	3
ENG 110 Written Expression I	3
Additional Courses for Diploma	
EET 126 Circuits II	3
EET 255 Electronics I	4
MET 113 Engineering Drawing	2
CST 122 Computer Programming— FORTRAN (Technical)	3
Social Science Elective (see list below)	3
Approved Technical Electives (see list below)	3
	32

Remaining Courses for Degree

EET 235 Electrical and Electronics Drawing	2
EET 245 Electrical Machines	4
EET 256 Electronics II	4
EET 257 Electronics III	4
EET 267 Digital Electronics & Microprocessors	4
PHY 141 & PHY 142 Physics	8
ENG 150 Technical Writing	3
Social Science Elective (see list below)	3
AAS Industrial Technology (Electrical Emphasis) Minimum Semester Credits	64
Approved Technical Electives: EET 111, EET 112, EET 268, MAT 124, MAT 163, MAT 164, MAT 264, MET 245, MET 132, MET 247, MET 249, MET 253, MET 255, MET 261, MET 280, MET 285, MET 286, MET 287, CIV 228, CIV 268, CIV 155, CHM 145, CHM 146, CST 115, CST 126, CST 130, CST 150, CST 200, CST 202, CST 205, CST 222, CAD 200, CAD 201, CAD 220	
Suggested Social Science Courses: ECO 104, ECO 110, ECO 111, PSY 100, PSY 110, SOC 110, SOS 120, SOS 130	

Courses in the fast changing engineering technologies such as Electronics, Design & Fabrication, Computers and Machine & Controls, can not be used for degree requirements if they were taken more than 5 years prior to graduation date. One exception to this rule would be the student who has been in the degree program for a number of years and has taken at least one required course every fall and spring semester.

A.A.S.—INDUSTRIAL TECHNOLOGY

INDUSTRIAL SAFETY AND OCCUPATIONAL HYGIENE OPTION

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	
CHM 120 Fundamentals of Chemistry	4
ENG 110 Written Expression I	3
MAT 139 Algebra	4
SAF 100 OSHA Codes and Regulations	3
Additional Courses for Diploma	
Social Science Elective	3
MAT 124 Statistics	3
BIO 131 Human Biology	4
SAF 120 Introduction to Industrial Hygiene	3
†SAF Industrial Safety Courses	6
	33
Remaining Courses for Degree	
Social Science Electives	3
ENG 150 Technical Writing or SPK 102 Effective Speaking	3
†SAF Industrial Safety Courses	9
Technical Electives (see list at right) *	8
Business Electives (see list at right)	7

AAS Industrial Technology	
Industrial Safety and Occupational Hygiene Option Minimum Semester Credits . . . Total	
62	
†Industrial Safety courses—SAF 101 Accident Investigation and Prevention, SAF 102 Design and Evaluation of Safety Program, SAF 105 Material Handling and Storage of Common and Special Products, SAF 110 Ventilation and Exhaust, SAF 111 Machine Guarding, SAF 130 Product Safety, SAF 250 Special Topics (1 to 3 credits), FRS 101 Fire Prevention and Protection, FRS 200 Hazardous Materials (All are 3 credits, except where marked otherwise.)	
Technical electives—MET 287 Plant Layout and Material Handling (2 credits), FRS 108 Building Construction (3 credits), CHM 121 or CHM 290 Chemistry. Others by permission.	
Business electives—BUS 118 Business Law (3 credits), BUS 150 Personnel Administration (2 credits), BUS 207 Managerial Accounting I (2 credits), BUS 252 Supervision of Personnel (2 credits). Others by permission.	
More Information:	
Francis J. Short, Chairman (Phone 771-5087)	
Donald Pixley, Program Coordinator	

MECHANICAL EMPHASIS

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	
MAT 139 Algebra	4
MAT 140 Trigonometry	4
MET 113 Engineering Drawing I	2
English Elective (see list at right)	3
Additional Courses for Diploma	
MET 121 Manufacturing Processes I	3
MET 122 Manufacturing Processes II	2
PHY 141 Physics	4
CST 122 Computer Programming—FORTRAN (Technical)	3
MET 132 Applied Mechanics	4
Approved Technical Electives (see list at right)	3
	32
Remaining Courses for Degree	
MET 235 Strength of Materials	3
MET 253 Engineering Materials & Industrial Processes	3

MET 261 Engineering Statistics & Quality Control	3
PHY 142 Physics	4
English Elective (see list below)	3
Social Science Electives (see list below)	6
Approved Technical Electives (see list below)	10
AAS Industrial Technology (Mechanical Emphasis)	
Minimum Semester Credits	64
The following may be taken as approved technical elective courses to meet degree requirements:	
MET 114, MET 223, MET 245, MET 247, MET 249, MET 255, MET 272, MET 280, MET 285, MET 286, MET 287, EET 111, EET 112, EET 125, EET 126, EET 255, EET 256, EET 257, CIV 159, CIV 160, CIV 161, CIV 251, CIV 252, CIV 255, CHM 145, CHM 146, MAT 163, MAT 164	
Suggested English Courses:	
ENG 100, ENG 110, ENG 120, ENG 150, SPK 102	
Suggested Social Science Courses:	
ECO 104, ECO 110, ECO 111, ECO 120, PSY 100, PSY 110, SOC 110, SOS 130	

PRODUCTION MANAGEMENT EMPHASIS

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses		Credits
*MAT 139 Algebra		
*MAT 140 Trigonometry		4
MET 113 Engineering Drawing I		2
English Elective (see list below)		3
Additional Courses for Diploma		
MET 121 Manufacturing Processes I		
MET 122 Manufacturing Processes II		2
PHY 141 Physics		4
BUS 149 Management & Organization I		2
MET 280 Management Decisions		2
MET 285 Time, Motion & Wage Study		2
Approved Electives (see list below)		4
		32
Remaining Courses for Degree		
CST 122 Computer Programming—FORTRAN (Technical)		
BUS 252 Supervision of Personnel		3
MET 261 Engineering Statistics & Quality Control		2
MET 286 Production Control		3
MET 287 Plant Layout & Materials Handling		2
PHY 142 Physics		2
English Elective (see list below)		4
Social Science Electives (see list below)		3
Approved Electives (see list below)		6
		7
AAS Industrial Technology (Production Management Emphasis) Minimum Semester Credits		
		64

*Must have a minimum of 4 hours of Mathematics as a requirement for the degree if background makes it unnecessary to take MAT 139 Algebra and MAT 140 Trigonometry.

The following may be taken as approved elective courses to meet degree requirements:

CST 110, MET 114, MET 125, MET 132, MET 235, MET 253, MET 255, MET 272, EET 111, EET 112, EET 125, EET 126, CIV 159, CIV 160, CIV 161, BUS 118, BUS 154, BUS 243, BUS 255, MAT 163, MAT 164

Suggested English Courses:

ENG 100, ENG 110, ENG 120, ENG 150, SPK 102

Suggested Social Science Courses:

ECO 104, ECO 110, ECO 111, ECO 120, PSY 100, PSY 110, SOC 110, SOS 130

A.A.S.—PARALEGAL ASSISTANT

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
ENG 110 Written Expression I	3
PLA 110 Survey of Paralegalism	3
PSY 110 General Psychology or SOC 110 Introduction to Sociology	3

Additional Courses for Diploma

ENG 120 Written Expression II or SPK 102 Effective Speaking	3
PLA 210 Legal Drafting	3
PLA 200 Real Property Law	3
PLA 205 Techniques of Research	3
PLA (Paralegal) Elective	3
BUS (Business) Elective	3
	30

Remaining Courses for Degree

BUS 100 Accounting I	4
PLA 215 Estates, Probates & Trusts	3
PLA (Paralegal) Elective	3
Math/Science Electives	6
SOC (Social Science) Elective	3
Liberal Arts Electives	6
Free Electives	6
AAS Paralegal Assistant	
Minimum Semester Credits	60

Suggested Math/Science Courses:

MAT 124, MAT 121, BIO 131, CHM 120, PHS 111,
MAT 110, MAT 111

More Information:

Francis J. Short, Department Chairman
(Phone 771-5087)
Matthew Vitanza, Program Coordinator

ASSOCIATE IN ARTS—LIBERAL ARTS and SCIENCES

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
Liberal Arts Courses	6

Additional Courses for Diploma

English (Composition)	6
Approved Humanities	3
Approved Social Sciences	6
Approved Liberal Arts Courses	11
	32

Remaining Courses for Degree

Remainder of degree requirements (see columns at right)	30
AA Liberal Arts & Sciences	
Minimum Semester Credits	62

Minimum requirements for AA degree:

English—a minimum of 12 credits, of which 6 shall be in composition and 6 in literature

History—a minimum of 6 credits in approved courses including HIS 100 The Rise of the West

Humanities—a minimum of 6 credits (6 in Philosophy or 6 in a foreign language)

Mathematics—students who have completed fewer than 3 units of secondary school mathematics (through 11th year math) are required to take 2 semesters of college level mathematics • Students who have completed 3 units of secondary school mathematics (through 11th year math) are required to take one semester of college level mathematics • Students who have completed more than 3 units of secondary school mathematics (including 11th year math) are not required to take additional math. They may, however, elect an appropriate math course or an elective in another field

Natural and Physical Sciences—a minimum of 8 credits

Social Sciences—a minimum of 6 credits

Electives—minimum of 16 credits (A maximum of 15 credits may be taken outside the offerings in Liberal Arts & Sciences with the approval of the Dean of Liberal Arts)

Satisfactory completion of all courses in a curriculum or as approved in a department

The Associate in Arts program is structured to allow the greatest flexibility in course selection and sequence. It is strongly recommended to begin the program by first satisfying the English requirement, i.e., 6 hours from ENG 100, ENG 110, or ENG 120.

More Information:

George Higginbottom, LA Dean (Phone 771-5031)

ASSOCIATE IN SCIENCE—LIBERAL ARTS

LIBERAL ARTS SCIENCE OPTION

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
ENG 110 Written Expression I	3
ENG 120 Written Expression II	3

Additional Courses for Diploma

*2 Science Electives (a sequence)	8
*2 Science Electives (a sequence)	8
HIS 100 Rise of the West	3
History Elective	3
#2 Social Science Electives	6
Mathematics or Philosophy or	
Foreign Language (see below)	6-8
	<hr/> 34-36

Remaining Courses for Degree

*2 Science Electives (a sequence)	8
*2 Science Electives (a sequence)	8
2 Literature Electives	6
†Math or Liberal Arts Electives	6-8
AS degree in Liberal Arts	
Minimum Semester Credits	62-66

*"Sequences" in biology, chemistry, physics or physical science must be taken for each of these 2 science requirements. (Recommended: BIO 111, 112; CHM 145, 146; PHY 161, 162; CHM 245, 246.) At least 8 hours must be at the 200 level.

#Courses to be chosen from ANT, ECO, POS, PSY, SOC, SOS designators.

† If the Calculus and Analytic Geometry requirement was met the first year, electives must be Philosophy (6) or Foreign Language (6-8). Higher level math can only be elected by approval of Dean if transfer needs require it. Humanities requirement would then be waived.

Students who have not passed Advanced Algebra or its equivalent in high school (usually 3½-4 high school units) should take Algebra and Trigonometry or Pre-Calculus the first year followed by a year of Calculus with Analytic Geometry in the second year. Only if students have the equivalent of Calculus with Analytic Geometry upon entry can they take the non-math elective.

More Information:

George Higginbottom, LA Dean (Phone 771-5031)

MENTAL HEALTH

AND RETARDATION EMPHASIS

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
ENG 110 Written Expression I	3
PSY 110 General Psychology	3
MAT Mathematics	
(MAT 124 Statistics recommended)	3
HIS 100 Rise of the West	3

Additional Courses for Diploma

LAB Science (BIO 111 or 131 recommended)	4
ENG 120 Written Expression II	3
SOC 110 Introduction to Sociology	3
PHI Elective	3
LA Elective	3
PSY 223 Intelligence and Mental Retardation	3
	<hr/> 31

Remaining Courses for Degree

LAB Science (BIO 112 or 132 recommended)	4
PSY 217 Counseling & Interviewing	3
SOS 288 Seminar in Community Social Service Organization	3
PSY 227 Behavior Modification	3
PSY 214 Abnormal Psychology	3
SOS 290 Social Science Field Work	3
Approved Electives in Mental Health & Retardation Emphasis (See page 48)	12

AS in Liberal Arts	
(Mental Health & Retardation Emphasis) Minimum	
Semester Credits	<hr/> 62

More Information:

Charles Croll, Program Coordinator (Phone 771-5021)



ASSOCIATE IN OCCUPATIONAL STUDIES

TOOL & DIE MAKING

SUGGESTED SEQUENCE: Students may select courses from any of the categories, but it is suggested that these sequences be followed to ensure that the proper prerequisites have been completed:

Introductory Courses	Credits
TDA 111 Blueprint Reading	3
MET 113 Engineering Drawing I	2
MET 114 Engineering Drawing II	2
MAT 106 Basic Technical Mathematics I	3
MAT 107 Basic Technical Mathematics II	3

Additional Courses for Certificate

TDA 113 Survey of Basic Industrial Safety & First Aid	2
TDA 114 Benchwork	2
MET 121 Manufacturing Processes I	3
MET 122 Manufacturing Processes II	2
BUS 255 Industrial and Labor Relations	2
TDA 120 Precision Measurement and Inspection	3
TDA 200 Metallurgy	2
TDA 130 Tool Grinding	2
TDA 140 Production Processes Certificate in Machinist Related Instruction—Minimum Semester Credits	34

Remaining Courses for Degree

TDA 132 Statics	2
TDA 235 Strength of Materials	3
ENG 150 Technical Writing or ENG 110 Written Expression I	3
BUS 252 Supervision of Personnel	2
ECO 104 Labor Economics and American Industry	3
EET 181 Installation and Maintenance of Electric Motors	2
TDA 261 Introduction to Quality Control and Inspection	3
TDA 248 Hydraulics and Pneumatics	3
TDA 250 Control Systems	3
TDA 230 Tool Design	4
MET 223 Manufacturing Processes III	2
Associate in Occupational Studies (AOS) in Tool & Die Making	64

More Information:

Mechanical Engineering Technology Chairperson
(Phone 771-5010)

CERTIFICATES AND DIPLOMAS

DIETETIC ASSISTANT (Leads to Certificate)

This program is designed for individuals already employed in the food service field, as there is a requirement for supervised work experience by a Registered Dietician. All persons entering the program are responsible for finding a preceptor, and registrations are on a pre-application basis.

	Credits
DIA 101 Nutrition	3
DIA 102 Institution Food Preparation	3
DIA 201 Food Management Systems	3
DIA 202 Personnel Management	3
Apply for Certificate—Dietetic Assistant	12

More Information:

Francis J. Short, Chairman (Phone 771-5087)
Lorraine Gula, Program Coordinator

LIBERAL ARTS & SCIENCES General Studies Emphasis (Leads to Diploma)

	Credits
English	6
Social Sciences & Humanities	18
Approved Electives	8
Liberal Arts Diploma (General Studies Emphasis)	32

The awarding of this diploma does not necessarily mean the student is a candidate for the Associate in Arts degree. Courses must have approval of the Liberal Arts Division, however, to insure that work is appropriate for the Associate in Arts Degree.

More Information:

George Higginbottom, LA Dean, 771-5031

INTERIOR DESIGN (Leads to Certificate)

This is a credit program for individuals interested in a career in interior design or those currently employed in home furnishings or design related fields who would like to obtain greater knowledge and expertise. Those whose interests in design are not job-related are also encouraged to enroll.

Full-time Liberal Arts students are referred to the Interior Design Model for the A.A. degree on page 46.

	Credits
ART 101 Introduction to Art	3
ART 105 Introduction to Design	3
INT 101 History of Architecture—Exterior and Interior	3
*INT 110 Interior Design I	4
*INT 111 Interior Design II	4
INT 120 Construction and Workroom Techniques I	2
INT 121 Specification Writing for Interior Designers	2
INT 130 Rendering	2
INT 140 Fabric Analysis	2
CIV 159 Architectural Drafting I	2
BUS 262 Small Business Management	3
Total	30

*These courses have prerequisites

More Information:

Robert Keller, Program Coordinator (Phone 771-5075)

GENERAL OFFICE (Leads to Certificate) See page 57.

This program can be taken as a full-time one-year program or taken as a part-time program either daytime or evening.

Center For Community Education

Broome Community College has an extensive program for "community education" which is separate from the credit offerings. While no college credit is given, this program has an important impact by serving many people in the community each year. It includes the following types of offerings:

Career Development

This category consists of short courses designed to update professional skills or introduce participants to new career areas. Recent programs have included such courses as Secretarial Refresher, American Management Association in Business, Refresher Nursing, and Microprocessor Applications for Engineers.

Corporate Service

The Corporate Service Program at Broome Community College is designed to demonstrate the College's commitment to local economic development. The Program's principal mission is to produce quality education and training packages for area corporations.

Course content, materials and presentations are tailored to fit the unique needs of each client. Classes may be scheduled during the more traditional day or evening time frame or around the specific shift schedules of the company. Most employee training programs can take place on the employer's premises, thus minimizing lost employee work time.

Course topics include communication skills, management seminars, safety training, technical programs, personal planning programs.

For additional information on contract education programs, call the Corporate Service Program in the Center for Community Education (771-5056).

Leisure Time Mini Courses

These are short term courses designed to explore a variety of personal interests, hobbies, crafts and recreational areas. Recent programs have included aerobics, assertiveness, tennis, Singles Night, home decoration, personal investing, and microwave cooking.

College for Kids

One of the most popular credit-free areas is a program specially designed for kids—from elementary schoolers to high school students. Regular offerings include:

- Computers for Kids
- Drawing for Kids
- Conversational Foreign Languages for Kids
- Science for Kids

Generally these short term offerings are scheduled on Saturday mornings throughout the year.

Conferences and Seminars

The College conducts workshops and seminars in a variety of topics throughout the year. These are intended to update job skills and explore new fields of interest. Some of the seminars have been for senior citizens, for law-enforcement personnel, for women seeking jobs and educational information, for volunteer firemen, for community agencies, and for business and industry.

Tour Programs

The College regularly sponsors a variety of charter tours to places such as The Saratoga Performing Arts Center, The Brooklyn Botanical Gardens, and the Cornell Gardens.

Registration

Credit Free Programs are offered continuously throughout the year. Free flyers list the courses, with their descriptions, times, dates, fees. A form is included in each term's flyer for easy mail-in registration. Registrations are accepted on a first-come, first-served basis.

Course Development

Credit Free Programs are a joint effort between Broome Community College faculty, community people, area agencies, organizations and business firms. Groups interested in teaching or co-sponsoring a mini course are encouraged to discuss the possibilities with the College's Center for Community Education. Many programs offered each year come about because someone suggested them, or a group was concerned about a real need in the community. A teaching interest and course proposal form is available for individuals wishing to teach a particular subject. These forms will be mailed upon request.

Continuing Education Units

Broome Community College awards Continuing Education Units (CEU's) for selected non-credit courses. These Continuing Education Units are offered in response to those students and employers who desire a measurable and understandable record of non-credit educational activities. Courses which carry CEU's and the number of CEU's granted for each course are identified prior to the start of the course.

Certificate of Participation

Certificates of Participation are given to those attending 3 out of 3 sessions, 4 out of 4 sessions or 5 out of 6 sessions. Many area employers will reimburse employees receiving a Certificate of Participation for a job-related course.

Course Descriptions

All courses listed in this section are scheduled to be offered during the 1983-84 academic year, unless otherwise indicated. The offering of any course, however, is subject to sufficient enrollment. Courses numbered from 100 to 199 are generally first-year courses, and those numbered in the 200's are usually taken in the second year.

BUSINESS COURSES IN ACCOUNTING, BUSINESS ADMINISTRATION AND MARKETING

BUS 100 Accounting I

4 Credits

Basic concepts and procedures in the accounting cycle. Emphasis on journals, ledgers, worksheets and financial statements. Merchandising transactions, special journals, payroll procedures.

4 Class Hours

BUS 101 Accounting II

4 Credits

Continued study of concepts and the special procedures for handling cash, inventories, receivables, payables, deferrals, accruals, plant assets. Accounting for partnerships, corporations and manufacturing concerns.

4 Class Hours

Prerequisite: BUS 100 Accounting I

BUS 102 Payroll Accounting

2 Credits

A comprehensive study of Federal and State laws and regulations affecting payrolls and payroll taxes. Practical report preparation and reporting requirements. Proper accounting practices to record payroll taxes.

2 Class Hours

BUS 104 Introduction to Credit Unions

3 Credits

Basic introduction to credit unions by those who have no previous knowledge of these financial cooperatives. Nature of credit unions, their history and philosophy, overview of the structure of the credit union movement and affiliated organizations including the National Credit Union Administration (NCUA). Legal basis for the operation of credit unions, their powers and characteristics including share drafts and VISA cards and the traditional services they offer. Roles and functions of credit union management. The developing financial system and basics of insurance and bonding for credit unions.

3 Class Hours

BUS 105 Credit Union Financial Operations

3 Credits

The financial management skills needed to operate a credit union, with emphasis upon basic credit union accounting including financial statement analysis and budgeting. Implications of risk management and insurance, along with investment procedures. Marketing and communications. Some bookkeeping experience is recommended as a prerequisite.

3 Class Hours

BUS 106 Basic Credit Union Operations

3 Credits

Loan granting, financial counseling, collections. Aspects of credit granting skills, loan policies and current regulations concerning the Equal Credit Opportunity Act (ECOA) and truth-in-lending. Financial counseling skills, including interviewing techniques and methods of personal finance. Collection systems and delinquency control, emphasizing written and telephone methods of recovering delinquent accounts. Credit unions and the law.

3 Class Hours

BUS 110 Introduction to Business

3 Credits

General background of modern business practices through the study of organization and management, production, human resources, accounting and finance, marketing, and the information needed for control and management decisions in business and society.

3 Class Hours

BUS 112 Business Mathematics

2 Credits

Number systems and arithmetic processes. Problems in percentage, simple interest, compound interest, discounting notes, depreciation, insurance, taxes and problems in accounting and marketing.

2 Class Hours

BUS 115 Business Statistics

3 Credits

Concepts and mechanics of measures of central tendency, measures of dispersion, probability and correlation as they relate to general problems in business and economics.

3 Class Hours

Prerequisite: MAT 003 Basic Mathematics Review A or equivalent

BUS 117 Business and Society

3 Credits

The role of business in the contemporary world. Increasingly difficult parameters for business despite the growing demands of accountability from government and of social responsibility from consumers. Business values and ethics, the role of business and government, environmental issues and energy policy, business and labor, business and the consumer, the influence of multi-national corporations.

3 Class Hours

- BUS 118 Business Law I** **3 Credits**
Law as an evolutionary and democratic process. Court structure, administrative law, law-of-contracts, legal principles of agency and partnerships.
3 Class Hours
- BUS 120 Business Law II** **3 Credits**
The law governing the negotiation or transfer of commercial paper and the sale of personal property. The law of personal and real property and sundry topics: bailments, insurance, landlord-tenant relationships, corporate and labor law.
3 Class Hours
Prerequisite: BUS 118 Business Law I
- *BUS 125 Real Estate Law** **5 Credits**
For real estate people preparing for the New York State Real Estate Broker's Licensing Examination. Under the supervision of the New York State Department of Licenses. (Credits applicable only to Business program with prior approval from one's academic advisor.)
5 Class Hours
- BUS 129 Consumer Behavior** **3 Credits**
Emphasizes the development of how people make purchase decisions in the market place. Consumer decision-making, learning, brand loyalty and market segmentation.
3 Class Hours
- BUS 131 Personal Finance** **3 Credits**
Guidelines to everyday financial problems regarding budgeting, installment buying, credit, insurance, taxes, savings, investments and purchasing items that require long-term financing such as a home or automobile.
3 Class Hours
- *BUS 135 Investments** **2 Credits**
Application of sound investment principles as they relate to stocks and bonds. Importance of the stock markets, their operation and their place in our society. Current happenings such as over-all market behavior, stock splits, rights and offerings are studied in various companies, making the subject matter current and relevant to financial events of the day. A model portfolio approach with weekly review by class participants.
2 Class Hours
- BUS 141 Marketing** **3 Credits**
The planning and strategy formulation of marketing goods, services, ideas or people, including the principal environmental opportunities and constraints facing the manager of both profit and non-profit organizations. Marketing mix (product, price, place, promotion) and the marketing concept. Lecture, discussion, and cases.
3 Class Hours
- *BUS 144 Domestic Transportation** **2 Credits**
Analysis of practices, theories and policies of the transport network. Study of transportation changes—in the locations and movements of goods and people as well as in the physical and institutional organizations (mergers, conglomerates) and their effect on the entire scope of transportation.
2 Class Hours
- *BUS 147 Retail Buying/Merchandising** **3 Credits**
The principles of what, when, where and how to buy in order to successfully purchase a stock of merchandise that can be resold at a profit. Analysis of merchandising mix, stock turns, and elements of effective display. Promotional aspects including point of sale, impulse and window displays.
3 Class Hours

- *BUS 149 Principles of Organization and Management** **2 Credits**
An introduction to the principles, practices and problems of business organizations. A study of the management process—planning, organizing, staffing, directing and controlling. (Completing this course will not give students credit for BUS 246 Principles of Management).
2 Class Hours
- *BUS 150 Personnel Administration** **2 Credits**
Techniques and methods to achieve utilization of manpower in business through proper selection, placement, training, job evaluation, wage setting and employee relations. (Completing this course will not give students credit for BUS 249 Personnel Management).
2 Class Hours
- BUS 152 Selling Fundamentals** **3 Credits**
Principles of sales with practical application. Steps leading to a successful sale—prospecting, planning and delivering, dramatizing, handling objections, closing, building good will. Development and presentation of a complete procedure for a product or service.
3 Class Hours
- *BUS 154 Purchasing** **3 Credits**
Analytical approach to techniques employed in the industrial purchasing phase of marketing. Emphasis on the organization of the purchasing functions as an operational unit of the firm directed toward procurement activities.
3 Class Hours
- BUS 157 Business Report Writing** **3 Credits**
Training in logical analysis of business case problems, applied to the preparation of accurate written reports. Methods and skills in formal and informal business writing. Preparation of tables, charts, reference citations and bibliographies. Improvement of basic business writing skill involved in inter-office memos, letters of adjustment, bids, quotations, public relations.
3 Class Hours
- BUS 160 Principles of Real Estate** **3 Credits**
Economic and social impact of real estate. Emphasis on the real estate cycle dealing with the essentials of real property, finance and legal aspects.
3 Class Hours
- BUS 162 Real Estate Investments** **3 Credits**
Approach and basic methodology for analyzing a real estate investment. Emphasis is focused on liquidity, maximum current income, future income, protection from inflation, tax shelter, capital gains and principal protection.
3 Class Hours
- *BUS 163 Real Estate for Salespersons** **4 Credits**
Course designed to meet New York State requirements for licensure as a real estate salesperson. Covers land use regulation, law of contracts, real estate instruments, real estate mathematics, real estate finance, closing and closing costs, brokerage and the law of agency, valuation and listing procedures, license law and ethics, human rights and fair housing.
4 Class Hours

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

BUS 164 Real Estate for Brokers*4 Credits**

Course designed to meet New York State requirements for licensure as a real estate broker. Covers land use regulation, operation of a real estate broker's office, general business law construction, subdivision and development, leases and agreements, liens and easements, taxes and assessments, investment property, voluntary and involuntary alienation, property management, condominiums and cooperatives, appraisal, advertising, rent regulations.

4 Class Hours**Prerequisite:** BUS 163 Real Estate for Salespersons**BUS 165 Insurance****3 Credits**

Insurance principles and coverage, types of carriers, organizations, history of insurance, analysis of types of coverage available for business and individuals in the casualty and life fields.

3 Class Hours**BUS 166 Property and Casualty Insurance****3 Credits**

Common policy provisions relating to property and casualty insurance and surety. Topics include automobile liability and physical damage, workmen's compensation, general liability, New York Insurance Law, rating and multi-line coverage.

3 Class Hours***BUS 170 Insurance for Agents and Brokers****8 Credits**

Comprehensive survey of insurance. Fire, marine, automobile, owner liability, burglary, boiler, machinery, accident and health, fidelity and surety insurance. Insurance law and duties of the agent.

8 Class Hours**BUS 188 Income Tax I****2 Credits**

Fundamental Federal and New York State income tax rules and regulations for filing personal income tax forms. Gross income inclusions and exclusions, adjustments to income, tax credits, estimated taxes, itemized deductions, penalties and avoidance, amended tax returns.

2 Class Hours**BUS 189 Income Tax II****2 Credits**

Preparation of supplementary tax forms, such as capital gains, rentals, income averaging, sole proprietorship, self employment taxes, investment credit, corporation tax returns, sub-chapter S corporations, gift and inheritance taxes.

2 Class Hours**BUS 200 Intermediate Accounting I****4 Credits**

An intensive study of accounting theory and procedures. Emphasis on balance sheet accounts and their interrelationships with income statement accounts. The accounting process and correction of errors. Advanced treatment of cash, receivables, inventories.

4 Class Hours**Prerequisite:** BUS 101 Accounting II**BUS 201 Intermediate Accounting II****4 Credits**

A more advanced treatment of accounting for fixed assets, intangible assets, current and long-term liabilities. Corporation accounting, funds flow reporting, financial statement analysis.

4 Class Hours**Prerequisite:** BUS 200 Intermediate Accounting I**BUS 205 Cost Accounting I****4 Credits**

Nature and purpose of cost accounting. Job order and process costing. Accounting for factory overhead and analysis of variances. Accounting for labor and material.

4 Class Hours**Prerequisite:** BUS 101 Accounting II**BUS 206 Cost Accounting II****4 Credits**

Further consideration of cost accounting principles, standard costs and variances. The construction of budgets, profit planning. Flexible budgets. Direct costing. Break even analysis. Accounting for by-products and joint products. Non-manufacturing costs.

4 Class Hours**Prerequisite:** BUS 205 Cost Accounting I***BUS 207 Managerial Accounting I****2 Credits**

Use of accounting information by management in decision making. Accounting procedures for the evaluation of performance and responsibility accounting in business and industry.

2 Class Hours***BUS 208 Managerial Accounting II****2 Credits**

Relationship of accounting information to such areas of managerial responsibilities as planning and control, cash budgeting and cash flow, relevant cost analysis, profit planning and the effects of price level changes.

2 Class Hours**Prerequisite:** BUS 207 Managerial Accounting I**BUS 220 Financial Information Systems****3 Credits**

Development of practicable accounting systems to provide the information required for effective managerial control. Techniques of flow charting, developing written procedures, analysis of organization structures, form design applied to the basic area of business.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** BUS 101 Accounting II and CST 110 Introduction to Data Processing***BUS 221 Mathematics for Business Analysis****2 Credits**

Basic quantitative mathematical methods for management. Techniques and their application to business problems. Foundation for further study of advanced principles of quantitative analysis.

2 Class Hours**Prerequisite:** BUS 112 Business Mathematics**BUS 224 Business Finance****3 Credits**

Financial principles and procedures. Detailed analysis of forms of business organizations. Single proprietorship, partnerships and corporations together with all financial instruments, surplus, reserves and equities. Application of ratios, rules for budgeting, capitalization, insurance, reorganization.

3 Class Hours***BUS 226 Credit and Collections****3 Credits**

Nature and role of credit, credit management, types of credit, credit department organization, credit reports and investigation, collection procedures, investigation and analysis of mercantile and financial institution credit risks, analysis of financial statements. It is suggested that BUS 100 Accounting I be taken prior to this course.

3 Class Hours

* TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS

BUS 229 Advertising

Development, economies, functions of advertising. Cost application, media, testing and research methods. Development of advertisements, copy and layout, methods and problems of reproduction. Planning the advertising campaign with step by step developments. Lectures, discussions, demonstrations. BUS 141 Marketing is recommended as preparation for this course.

4 Class Hours

4 Credits

***BUS 238 Marketing Research**

Methods of collecting and interpreting marketing information which affect marketing management. Specific applications to problem identification in market development, gauging market potential and implementation of research designs in the market place. It is suggested that BUS 115 Business Statistics be taken prior to this course.

3 Class Hours

3 Credits

BUS 242 Marketing Seminar

Senior capstone course which integrates various business subjects previously studied. Individual and team approach to analysis of comprehensive marketing and management cases and cooperative consideration of alternative decisions to problem solving. For non-Marketing majors.

3 Class Hours

Prerequisite: Permission of Chairperson of Business Department

3 Credits

***BUS 243 Industrial Management**

Fundamentals of organization and management of industrial concerns. Emphasis upon leadership, human behavior, analysis in decision making. Examination of problem solving in industrial enterprises and applying management principles. (Completing this course will not give students credit for BUS 246 Principles of Management).

2 Class Hours

2 Credits

BUS 245 Management: A Behavioral Approach

A comprehensive analysis of managerial theories and an integration of selected social sciences to investigate organizational problems related to managerial functions. Communications, decision-making, control theory. Impact of the organizational environment upon human behavior.

3 Class Hours

3 Credits

***BUS 246 Principles of Management**

Principles of managerial practices. Planning, organizing, directing, and controlling. Exposes students to proper methods and techniques to achieve employee and job satisfaction. Topics covered include scientific management, behavioral theory, and introduction to management science.

3 Class Hours

3 Credits

***BUS 247 Sales Management**

Development of control techniques in the administration of sales forces. Incentive systems, territory planning, development of sales potentials, personnel problems peculiar to this field.

3 Class Hours

3 Credits

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

BUS 249 Personnel Management

Principles of managerial practices. The four functions of management—planning, organizing, directing and controlling. Designed to expose the student to the proper methods and techniques to achieve employee and job satisfaction. Processing, developing, maintaining and proper utilizing of the labor force. A review of the history and impact of organized labor incorporating economic, political and social pressures which influence employment. Effective interview poise, personal appearance, interviewing techniques, job opportunities and placement services. Correct preparation of a resume and the utilization of references.

3 Class Hours

3 Credits

***BUS 252 Supervision of Personnel**

Concepts and psychology of personnel supervision. Emphasis on the application of management theory through use of case studies and classroom discussions.

2 Class Hours

2 Credits

***BUS 255 Industrial Labor Relations**

Processes of bargaining and contract administration between industrial employers and unions representing employees, as a system of compromising opposing objectives and settling differences. Origins of unions, how they organize and gain recognition and how the labor agreement is negotiated and administered. Interaction among employees, stewards and supervisors. Labor laws. Institutions such as the National Labor Relations Board, mediation services, arbitration boards and courts. (Completing this course will not give students credit for BUS 256 Labor Relations for Business and Industry).

2 Class Hours

2 Credits

BUS 256 Labor Relations for Business and Industry

Analysis of labor relations and collective bargaining procedures. Policies of organized labor, employers and government in solving labor-management disputes. Grievance procedure, wage and price policies, arbitration, mediation, negotiations and labor contracts.

3 Class Hours

3 Credits

***BUS 257 Organizational Behavior**

Processes affecting the behavior of individuals and groups are examined with particular attention to their managerial implications. Relevant concepts and research evidence help students to analyze their experiences and generalize from them. Similarities and differences among effective organizational structures and managerial strategies in the public, private and non-profit sectors.

3 Class Hours

3 Credits

***BUS 258 Human Relations in Business**

Basic psychological principles applied to the problems of employee selection, training, evaluation, merit rating and advancement. Social interaction and human relations in industry. Motivation concepts and techniques, job satisfaction, morale, conference leadership and employee and management development.

2 Class Hours

2 Credits

BUS 260 Management of Physical*Distribution—Transportation**

Rates, documentation and career liability (legal implications), factors in routing transportation in the milieu of physical distribution and current issues in the field.

2 Class Hours

Prerequisite: BUS 144 Domestic Transportation

2 Credits

BUS 261 Office Management**2 Credits**

A comprehensive study of modern management principles and practices in office organization, operation and control. Office layout, personnel, office equipment, processing of information and the planning, flow and measurement of work within the office.

2 Class Hours**BUS 262 Small Business Management****3 Credits**

Designed for those interested in small business as owner-managers. Development of sound management and modern techniques covering organization, marketing, financing, insurance risk, legal implications, regulations, taxes. (Completing this course will not give students credit for BUS 360, 361, 362).

3 Class Hours**BUS 264 Retailing****3 Credits**

Fundamentals of purchasing, merchandising, pricing, promotion. Principles of retail management. Coordination of accounting and basic marketing concepts at the market focal point.

3 Class Hours**BUS 270 Decision Making****3 Credits**

An introduction to managerial problems relating to the planning and controlling functions, which provide guidelines to making rational decisions. A realistic approach utilizing cases and simulation is taken to expose the student to quantitative as well as subjective analysis to point out the constraints placed upon management.

3 Class Hours**Prerequisite: BUS 115 Business Statistics****BUS 295 Accounting Seminar****4 Credits**

In-depth treatment of accounting for payroll taxes followed by actual completion of required state and federal tax forms. Thorough coverage of the Individual Tax Form 1040, schedules A, B, C, D, E and G, small business taxes, schedules C, SE, and investment credit. Corporate Tax Form 1120. Accounting concepts and current trends in accounting as reflected through financial statement analysis.

4 Class Hours**BUS 297 Cooperative Work Experience****1-3 Credits**

Cooperative education is available to students in the marketing management, marketing sales and accounting curriculums. On-the-job experience may be obtained in such areas as retailing, banking, fast foods, government services and hotel management, as well as in CPA firms, public accounting offices, industrial, business and government offices where accounting is performed. To be eligible for these opportunities a student should maintain an over-all cumulative grade-point average of 2.5, with a 3.00 average in business courses, and have no F's. Cooperative work students will meet with the coordinator one hour each week.

BUS 299 Independent Study**1-4 Credits**

The student, under the guidance of a faculty member, undertakes an investigation, study and research in an advanced concept or problem concerning his/her major field of study. Only one independent study course is allowed per semester.

Prerequisite: Approval of Faculty Member and Department Chairperson***BUS 360 Establishing a Small Business****1 Credit**

Designed for those who wish to establish their own business as owner-managers. Development of sound management and modern techniques covering talents needed for success. How to select the type of business to enter, to acquire a franchise, and to choose the location.

3 Class Hours (5 weeks)***BUS 361 Operating a Small Business****1 Credit**

Designed for those who wish to operate their own business or who are presently operating their own business. Development of sound management and modern techniques covering the production of a product or service, marketing of the business, supplier relations, techniques of management, and the safeguarding of the firm's assets.

3 Class Hours (5 weeks)***BUS 362 Record Keeping in a Small Business****1 Credit**

Designed for those interested in small business as owner-managers. An in-depth treatment of fundamentals of the accounting process, evaluating the financial health of the business, regulations and taxes affecting the small business and using the computer in operating the small business.

3 Class Hours (5 weeks)**ANTHROPOLOGY****ANT 110 Physical Anthropology and Archaeology****3 Credits**

Introduction to human evolution: integrates paleoanthropology, population genetics, and the study of primates in an ecological explanation. Both the archaeological record and contemporary societies are explored. Available evidence about man's past is related. Ambiguities, controversies and contributions of the field are weighed. New trends in the discipline, such as the emphasis on human disease for medical anthropology, may be included.

3 Class Hours**ANT 111 Cultural Anthropology****3 Credits**

Introduction to the study of culture as the behavioral adaptation unique to human societies. Cultural characteristics shared by all humans and major variations found among specific groups. Explanations for rules of social interaction in common activities, the social functions of institutions such as marriage and kinship, the ecological basis of many institutions, language as a culturally defined system of communication, modernization in our own and third world societies.

3 Class Hours**ANT 299 Independent Study****1-3 Credits**

An individual student project in anthropology which is beyond the scope of requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairperson.

Prerequisite: 3 semester hours in Anthropology**ART****ART 101 Fine Arts: Introduction to Art****3 Credits**

Basic art principles and concepts together with their historical development as shown in representative works of painting, sculpture and architecture. Gallery visits.

3 Class Hours***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

ART 105 Introduction to Design **3 Credits**

Introduction to various elements of two-dimensional design (color, composition, texture).

2 Class Hours, 2 Laboratory Hours

ART 106 Introduction to Three-Dimensional Design **3 Credits**

Exploration of esthetic and functional elements of three-dimensional design through studio projects and architectural forms and space. Projects in wood, paper, pigment, twine, plaster of Paris.

2 Class Hours, 2 Laboratory Hours

ART 115 Drawing **3 Credits**

Intensive drawing instruction in charcoal, pencil, pen and ink, pastel and mixed media, life drawing, still-life composition.

6 Studio Hours

ART 116 Painting I **3 Credits**

Beginning painting instruction and practice in techniques of oil painting, still-lives, landscapes.

6 Studio Hours

Prerequisite: ART 115 Drawing or Instructor's permission

ART 120 Sculpture Fundamentals **3 Credits**

Abstract elements of sculptural form as revealed through analysis of student work and historical examples. Emphasis on developing the student's ability to utilize concepts in practice and to expand his/her understanding of the general function of form as symbolic structure. (Not offered in 1983-84 academic year).

6 Studio Hours

ART 130 Pottery **3 Credits**

Study of the basic processes of the design and creation of ceramics, both functional and sculptural. Fundamentals of hand-building, potter's wheel, glazing and firing.

6 Studio Hours

ART 140 Printmaking **3 Credits**

Three equal parts to course—linecut, woodcut, monotype. Explanation, uses, technical demands, potential and limitation of each process. Students to develop images for blocks or plates.

6 Studio Hours

ART 215 Painting II **3 Credits**

Continuation of painting instruction and practice done in ART 116 Painting I.

6 Studio Hours

Prerequisite: ART 116 Painting I or instructor's permission

ART 216 Painting III **3 Credits**

Painting from costumed model; advanced composition devices.

6 Studio Hours

Prerequisite: ART 116 Painting II or instructor's permission

ART 220 Life Sculpture **3 Credits**

The principles of abstract form applied to the human body, and the expressive possibilities of the human figure explored. Studies of actual models in oil-base clay later to be cast into plaster or carved in wood or stone. (Not offered in 1983-84 academic year).

6 Studio Hours

Independent Study: Art

1-3 Credits

ART 297 Sculpture

ART 299 Art History

An individual student project concerned with advanced work in a specific area of art. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in Art.

AUTOMOTIVE SERVICE SPECIALIST

These courses are all designed to provide theory-related instruction to supplement apprenticeship training on the job, and practically all are taught in the evening only.

CAR 151 Auto Electrical Systems **3 Credits**

Basic electrical systems found in automotive equipment: lighting and ignition systems, schematic troubleshooting, power assist systems, wiring harnesses.

3 Class Hours

CAR 152 Integrated Automotive Systems **3 Credits**

Introductory course for automotive apprentices. Theory for foundation in the field of Automotive Technology.

3 Class Hours

CAR 153 Advanced Engine Diagnosis **3 Credits**

Continuation of CAR 152 Integrated Automotive Systems, with special emphasis on advanced diagnostic testing and repair procedures. Application of the chassis dynamometer, HC/CO testers and oscilloscopes.

3 Class Hours

CAR 154 Brake Systems and Chassis Repair **3 Credits**

Related trade theory of servicing brake systems, window regulators, seat mechanisms, exhaust systems and other chassis accessories. Delivery and road test procedures.

3 Class Hours

CAR 155 Steering and Suspension Systems **3 Credits**

Steering systems (both power and manual), suspension systems, wheel alignment. Suspension, front end, steering repair and alignment.

3 Class Hours

CAR 156 Transmission and Drive Systems **3 Credits**

Automatic transmissions, clutches, standard transmissions, overdrives, propeller shafts, drive axles. Theory of operation, diagnosis, maintenance and repair.

3 Class Hours

CAR 157 Power Plant Overhaul Theory **3 Credits**

Theoretical procedures necessary to rebuild an automotive engine. Disassembly and assembly techniques along with the restoring of tolerances by the machining of engine components.

3 Class Hours

CAR 158 Heating and Air-Conditioning Theory **3 Credits**
Automotive heating and air-conditioning systems emphasizing the basic air conditioning cycle
3 Class Hours

CAR 159 Automotive Parts Department Management **3 Credits**
In-depth study of parts numbering, storage, cataloging, retrieval, ordering, stocking, management techniques.
3 Class Hours

CAR 160 Automotive Service Department Management **3 Credits**
Marketing techniques, financial analysis, personnel management, work scheduling and distribution, use of pricing manuals.
3 Class Hours

BIOLOGY

BIO 111 General Biology I **4 Credits**
Principles of evolution and ecology as unifying themes in biology. Evolutionary processes and ecological adaptations illustrated by plant and animal diversity. The community of cellular life processes. Current environmental problems. The laboratory includes rigorous field trips.
3 Class Hours, 3 Laboratory Hours

BIO 112 General Biology II **4 Credits**
Principles of evolution and ecology as unifying themes in biology. The human animal and its systems. Concepts of animal behavior. Classical genetics, current concepts of gene function and human genetics. Organismal growth and development. Current environmental problems. The laboratory includes rigorous field trips.
3 Class Hours, 3 Laboratory Hours

BIO 120 Human Sexuality **3 Credits**
Explores information about sexual attitudes, relationships, sexual anatomy, contraception, venereal disease. Course aims to make students feel more comfortable thinking and talking about sex and to prepare them to make rational decisions about this important aspect of their lives.
3 Class Hours

BIO 131 Human Biology I **4 Credits**
Normal structure (gross and microscopic) and function of the skeletal, muscular and nervous systems. Emphasis on physiology in lectures and on anatomy in laboratory, stressing those aspects which have greatest relevance to the student's curriculum
3 Class Hours, 2 Laboratory Hours

BIO 132 Human Biology II **4 Credits**
A continuation of BIO 131 Human Biology I covering the circulatory, respiratory, digestive, urinary, reproductive and endocrine systems. Emphasis on physiology in lectures and on anatomy in laboratory, stressing those aspects which have greatest relevance to the student's curriculum.
3 Class Hours, 2 Laboratory Hours
Prerequisite: BIO 131 Human Biology I or permission of instructor

BIO 140 Pathophysiology **3 Credits**
Symptoms, syndrome and etiology of pathogenic processes affecting the function and structure of the body.
3 Class Hours
Prerequisite: BIO 132 Human Biology II

BIO 150 Microbiology I **4 Credits**
The biology of the common bacteria and related microorganisms. General microbiology including asepsis, disinfection, sterilization, cultivation, pathogenicity, resistance, identification.
3 Class Hours, 3 Laboratory Hours

BIO 160 Microbiology **3 Credits**
Position of microorganisms in the biological world, as well as their cultivation and identification. Asepsis, disinfection and sterilization. Disease transmission and the human elements in defense. For Medical Office Assistant and Dental Hygiene students.
2 Class Hours, 3 Laboratory Hours

BIO 170-199 Special Topics in Biology **1-2 Credits**
Special courses covering particular topics in the biological sciences beyond the scope of the normal course offerings.

BIO 171 Physiology of Exercise **1 Credit**
Designed to develop an understanding and appreciation for the role of consistent exercise in maintaining good health. The interrelationship of the muscular, cardiovascular, respiratory and digestive systems and the net effect of training on these systems.
1 Class Hour

BIO 205 Aquatic Ecology **4 Credits**
A study of how light, temperatures and water chemistry influence the plants and animals which live in ponds, lakes, rivers and estuaries. Current and future ecology. Local, regional and national water related problems including pollution, waste water treatment, ground water contamination, acid rain, water recycling, salt water encroachment, wetland destruction.
3 Class Hours, 2 Laboratory Hours
Prerequisites: Senior status, one year college science or permission of instructor

BIO 299 Independent Study **1-3 Credits**
An individual student project in a biological field which is beyond the scope or requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairperson. Independent Study is available to students who have completed a minimum of 3 semester hours of biology.

CHEMISTRY AND CHEMICAL ENGINEERING TECHNOLOGY

CHM 102 Preparatory Chemistry

4 Credits

Introductory course in chemistry emphasizing problem-solving techniques related to chemical concepts. Atomic structure, stoichiometry, metric units, chemical bonding, chemical nomenclature, solution chemistry.

4 Class Hours

CHM 120 Fundamental Chemistry

4 Credits

First course for Fire Protection Technology, Health Sciences and Criminal Justice students. Composition of substances, atomic structure, periodicity, bonding, chemical equations, states of matter, aqueous solutions, chemical equilibria and introduction to organic chemistry.

3 Class Hours, 3 Laboratory Hours

CHM 121 Forensic Sciences

4 Credits

Introduction to forensic chemistry for Criminal Justice students. Examination of firearms, cartridges, explosives, drugs and other types of physical evidence. Emphasis on proper handling of substances found in crime scene investigations. Laboratory techniques include many modern instrumental methods, such as gas chromatography, infrared and mass spectroscopy.

3 Class Hours, 3 Laboratory Hours

Prerequisite: CHM 120 Fundamental Chemistry or permission of department

***CHM 125 Chemistry**

3 Credits

Fundamental concepts of inorganic chemistry. Composition of substances, kinetic and molecular theories, atomic structure and bonding, solutions and colloids, ions in solution and introduction to organic chemistry. For Fire Protection Technology students.

2 Class Hours, 3 Laboratory Hours

CHM 131 Chemistry

3 Credits

Fundamental concepts of general inorganic chemistry. Stoichiometry, atomic structure, periodicity, chemical bonding, kinetic theory, states of matter, acids, bases and chemical equilibria. For Medical Laboratory Technology students.

3 Class Hours

Corequisite: CHM 131L Chemistry Laboratory

CHM 131L Chemistry Laboratory

1 Credit

Experiments illustrating concepts from lecture and important laboratory techniques with strong emphasis on careful, accurate recordkeeping. A number of the experiments are qualitative, the rest quantitative.

3 Laboratory Hours

Corequisite: CHM 131 Chemistry

CHM 132 Chemistry

3 Credits

A continuation of CHM 131 Chemistry including chemical equilibria, coordination chemistry and extensive treatment of classical quantitative analysis. For Medical Laboratory Technology students.

3 Class Hours

Prerequisites: CHM 131 Chemistry and CHM 131L Chemistry Laboratory

Corequisite: CHM 132L Chemistry Laboratory

CHM 132L Chemistry Laboratory

1 Credit

Experiments illustrating concepts from lecture, including eight weeks of classical volumetric analysis and experiments involving chemical equilibrium and colligative properties of solutions. Emphasis on careful, accurate recordkeeping.

3 Laboratory Hours

Prerequisites: CHM 131 Chemistry and CHM 131L Chemistry Laboratory

Corequisite: CHM 132 Chemistry

CHM 141 General Chemistry

3 Credits

Application of chemical principles to evaluate important scientific and technological issues in our complex society. Energy sources: coal, gas, petroleum, solar, geothermal. Radioactivity, effects of radiation, nuclear weapons. Man's effect on the climate, warming and the greenhouse effect, atmospheric particles, supersonic transport, weather modifications. For Liberal Arts non-science students.

3 Class Hours

Corequisite: CHM 141L General Chemistry Laboratory

CHM 141L General Chemistry Laboratory

1 Credit

Experimentation to introduce techniques in the laboratory while increasing awareness of the chemical world and to attain some insight into how a chemist attacks a real problem. Qualitative and quantitative measurements.

3 Laboratory Hours

Corequisite: CHM 141 General Chemistry

CHM 142 General Chemistry

3 Credits

A continuation of CHM 141 General Chemistry. Chemistry of the air, water and land environment. Chemicals in the internal environment: food and drugs. Consumer chemistry. Basic concepts of organic chemistry, polymers and plastics, natural and synthetic organic medicinal compounds, legislation of food additives, regulation of carcinogens, chemistry of living systems. For Liberal Arts non-science students.

3 Class Hours

Prerequisite: CHM 141 General Chemistry

Corequisite: CHM 142L General Chemistry Laboratory

CHM 142L General Chemistry Laboratory

1 Credit

A continuation of CHM 141L General Chemistry Laboratory. Laboratory experimentation to substantiate classroom lectures: water hardness, preparation of aspirin, soaps and detergents, dyes, plastics, etc.

3 Laboratory Hours

Prerequisite: CHM 141L General Chemistry Laboratory

Corequisite: CHM 142 General Chemistry

CHM 145 Chemistry

3 Credits

A comprehensive treatment of general chemistry for the science-oriented student, emphasizing the quantitative relationships in chemical reactions and the current atomic and bonding theories explaining chemical phenomena. Periodicity, writing, balancing and interpretation of chemical equations, stoichiometric calculations based on equations, solution stoichiometry. Laws governing physical states and changes in state, physical properties of solutions. For Engineering Science and Liberal Arts science majors.

3 Class Hours

Prerequisite: Regents Chemistry or CHM 102 Preparatory Chemistry

Corequisite: CHM 145L Chemistry Laboratory

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

CHM 145L Chemistry Laboratory**1 Credit**

Laboratory experiments to reinforce the fundamental principles discussed in lecture.

3 Laboratory Hours**Corequisite:** CHM 145 Chemistry**CHM 146 Chemistry****3 Credits**

Continuation of CHM 145 Chemistry including chemical thermodynamics, kinetics, acid-base theory, chemical equilibrium, equilibria in aqueous solution and electrochemistry. For Engineering Science and Liberal Arts science majors.

3 Class Hours**Prerequisite:** CHM 145 Chemistry**Corequisite:** CHM 146L Chemistry Laboratory**CHM 146L Chemistry Laboratory****1 Credit**

A continuation of CHM 145L laboratory. Emphasis is placed on pH and spectrophotometric instruments and techniques.

3 Laboratory Hours**Prerequisite:** CHM 145L Chemistry Laboratory**Corequisite:** CHM 146 Chemistry**CHM 161 Chemistry****3 Credits**

Basic concepts underlying chemical action emphasizing measurement, basic chemical calculations, atomic structure and the periodic law. Chemical bonding, states of matter, solutions, kinetic/molecular theories, chemical equilibrium and energy changes in chemical reactions.

3 Class Hours**Prerequisite:** Regents Chemistry or CHM 102 Preparatory Chemistry**Corequisite:** CHM 161L Chemistry Laboratory**CHM 161L Chemistry Laboratory****1 Credit**

Experiments illustrating concepts from lecture. Emphasis on keeping a laboratory notebook and on laboratory skills required for the chemical laboratory. Exercises mostly quantitative in nature.

3 Laboratory Hours**Corequisite:** CHM 161 Chemistry**CHM 162 Chemistry****3 Credits**

A continuation of CHM 161 Chemistry. Oxidation-reduction and electrochemistry, acids, bases and salts. Solubility product principle, acid/base equilibrium, thermodynamics. Principles of qualitative analysis.

3 Class Hours**Prerequisite:** CHM 161 Chemistry and CHM 161L Chemistry Laboratory**Corequisite:** CHM 162L Chemistry Laboratory**CHM 162L Chemistry Laboratory****1 Credit**

Experiments illustrating concepts from lecture, including seven weeks of semi-micro qualitative analysis. Emphasis on laboratory skills and notebookkeeping.

3 Laboratory Hours**Prerequisites:** CHM 161 Chemistry and CHM 161L Chemistry Laboratory**Corequisite:** CHM 162 Chemistry**CHM 221 Organic Chemistry****3 Credits**

Nomenclature, properties of selected functional groups, mechanisms, stereochemistry, synthesis and spectroscopy. The laboratory emphasizes techniques of separation, identification and purification by classical methods and instrumental methods such as gas chromatography and spectroscopy. For Medical Laboratory Technology students.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CHM 132 Chemistry**CHM 222 Organic Chemistry****3 Credits**

A continuation of CHM 221 Organic Chemistry including a study of the structure, reactivity and stereochemistry of biomolecules and medicinally active compounds. Laboratory includes multi-step synthesis of pharmaceuticals and selected experiments with biomolecules.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CHM 221 Organic Chemistry**CHM 224 Instrumental Analysis****4 Credits**

Theory and laboratory instruction in electrochemical, optical, nuclear methods of analytical chemistry, including potentiometry, polarography, coulometry, conductimetry, liquid scintillation counting, gamma spectrometry. Ultraviolet-visible, infrared, atomic absorption spectrophotometry. GC-mass spectrometry, thermal analysis, carbon-hydrogen-nitrogen analysis, gas chromatography, ion chromatography, high performance liquid chromatography. For Medical Laboratory Technology students.

2 Class Hours, 6 Laboratory Hours**Prerequisite:** CHM 132 Chemistry**CHM 245 Organic Chemistry****3 Credits**

A fundamental treatment of organic chemistry. Organic nomenclature, chemical properties of selected functional groups, mechanisms, stereochemistry and synthetic methods. For Liberal Arts science majors and Engineering Science students with departmental approval.

3 Class Hours**Prerequisite:** CHM 146 Chemistry**Corequisite:** CHM 245L Organic Chemistry Laboratory**CHM 245L Organic Chemistry Laboratory****2 Credits**

Basic techniques of separation and purification such as recrystallization, distillation, extraction, chromatography, modern instrumental techniques. Introduction to modern organic synthesis.

4 Laboratory Hours**Corequisite:** CHM 245 Organic Chemistry**CHM 246 Organic Chemistry****3 Credits**

A continuation of CHM 245 Organic Chemistry including spectroscopy and introduction to molecules of biological importance.

3 Class Hours**Prerequisite:** CHM 245 Organic Chemistry**Corequisite:** CHM 246L Organic Chemistry Laboratory**CHM 246L Organic Chemistry Laboratory****2 Credits**

A continuation of CHM 245L Organic Chemistry Laboratory including an introduction to complex multi-step synthesis and qualitative organic analysis by classical and modern instrumental techniques.

4 Laboratory Hours**Prerequisite:** CHM 245 Organic Chemistry and CHM 245L Organic Chemistry Laboratory**Corequisite:** CHM 246 Organic Chemistry

CHM 261 Organic Chemistry **3 Credits**
 A systematic study of the families of organic chemistry, including concepts of bonding, equilibria, reaction kinetics, energy profiles, isomerism and synthesis. Families viewed with emphasis on nomenclature, structural features, preparations, reaction products and uses.
3 Class Hours
Prerequisite: CHM 162 Chemistry
Corequisite: CHM 261L Organic Chemistry Laboratory

CHM 261L Organic Chemistry Laboratory **2 Credits**
 Experiments include separation techniques, identification using instrumentation (infra-red spectroscopy, gas chromatography) and syntheses.
6 Laboratory Hours
Corequisite: CHM 261 Organic Chemistry

CHM 262 Organic Chemistry **3 Credits**
 Continuation of CHM 261 Organic Chemistry. Mass spectroscopy and nuclear magnetic resonance. Special topics including heterocyclic compounds, polymers, biomolecules.
3 Class Hours
Prerequisite: CHM 261 Organic Chemistry
Corequisite: CHM 262L Organic Chemistry Laboratory

CHM 262L Organic Chemistry Laboratory **2 Credits**
 Emphasis on qualitative organic chemistry. Identification of unknowns.
6 Laboratory Hours
Prerequisite: CHM 261L Organic Chemistry Laboratory
Corequisite: CHM 262 Organic Chemistry

CHM 265 Instrumental Methods of Chemical Analysis **3 Credits**
 Principles and techniques of modern quantitative analysis including treatment of analytical data, sampling, solution adjustment, chelatometry, redoximetry, aqueous and non-aqueous acid-base titrations, electrophoresis and isoelectric focusing, ion-exchange, ion chromatography, conductimetry, coulometry, electrogravimetry, polarography, amperometry, potentiometry, radioisotope methodology. For Chemical Engineering Technology and Liberal Arts "chemical model" students.
3 Class Hours
Prerequisite: 1 full year of college general chemistry and MAT 142 Applied Calculus I and PHY 142 Physics
Corequisite: CHM 265L Instrumental Methods of Chemical Analysis Laboratory

CHM 265L Instrumental Methods of Chemical Analysis Laboratory **2 Credits**
 Application of chelometric, redox, precipitometric, aqueous and non-aqueous acid-base methods for chemical analysis of organic and inorganic compounds. Operation of polarographs, conductimeters, potentiometers, coulometers, and electroanalyzers for applications in electrochemical methods of analysis. Operation of a microprocessor controlled liquid scintillation counter, gamma spectrometer, and Geiger-Muller counter for applications in radioisotope methodology. Statistical evaluation of data obtained by the various analytical methods. For Chemical Engineering Technology and Liberal Arts "chemical model" students.
6 Laboratory Hours
Prerequisite: 1 full year of college general chemistry and MAT 142 Applied Calculus I and PHY 142 Physics
Corequisite: CHM 265 Instrumental Methods of Chemical Analysis

CHM 266 Instrumental Methods of Chemical Analysis **3 Credits**
 Principles and techniques of modern instrumental methods of chemical analysis including ultraviolet, visible, infrared, nuclear magnetic resonance, atomic absorption, emission and mass spectroscopy. Column, thin-layer, gel permeation, gas and liquid-liquid chromatography. Chemical microscopy and differential thermal analysis. For Chemical Engineering Technology students.
3 Class Hours
Prerequisite: CHM 265 Instrumental Methods of Chemical Analysis
Corequisite: CHM 266L Instrumental Methods of Chemical Analysis Laboratory

CHM 266L Instrumental Methods of Chemical Analysis Laboratory **2 Credits**
 Analysis by optical, separations, thermal techniques, trace methods applied to contemporary, industrial and environmental problems.
6 Laboratory Hours
Prerequisite: CHM 265 Instrumental Methods of Chemical Analysis
Corequisite: CHM 266 Instrumental Methods of Chemical Analysis

CHM 271 Chemical Processes **5 Credits**
 Material and energy balances along with applied chemical and physical principles as they apply to chemical engineering. Emphasis on problem-solving in the classroom and engineering reports in the laboratory.
3 Class Hours, 4 Laboratory Hours
Prerequisites: CHM 162 Chemistry and MAT 142 Applied Calculus I and PHY 142 Physics

CHM 272 Chemical Processes **5 Credits**
 Staged operations dealing with phase equilibrium. Graphical, analytical and computer methods are used to solve unit operations problems. The laboratory emphasizes engineering reports.
3 Class Hours, 4 Laboratory Hours
Prerequisite: CHM 271 Chemical Processes

CHM 290 Forensic Toxicology **3 Credits**
 Application of the principles of forensic toxicology and the related forensic sciences within the scope of medical-legal investigation. Drug and poison analysis, examination of physical evidence and death investigation. Optional laboratory sessions will provide basic knowledge of forensic analysis utilizing microscopy, gas chromatography, thin layer chromatography and spectroscopy.
2 Class Hours, 2 Laboratory Hours
Prerequisite: CHM 120 Fundamental Chemistry or a semester of General Chemistry or permission of instructor

***CHM 291 Organic Chemistry I** **3 Credits**
***CHM 292 Organic Chemistry II** **3 Credits**
 Nomenclature, properties of selected functional groups, mechanisms, stereochemistry, synthetic methods and spectroscopy. The laboratory stresses basic techniques of reactions, separations and isolation by classical methods as well as modern instrumental techniques.
2 Class Hours, 3 Laboratory Hours each
Prerequisites: CHM 146 Chemistry for CHM 291
 CHM 291 Organic Chemistry I for CHM 292

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

***CHM 293 Analytical-Instrumental Chemistry I** **3 Credits**
 Classical analytical chemistry—sampling, statistics, gravimetric and volumetric analysis. Introduction to electrochemistry.
2 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 146 Chemistry

***CHM 294 Analytical-Instrumental Chemistry II** **3 Credits**
 Continuation of CHM 293 Analytical-Instrumental Chemistry I.
 Additional electrochemistry and electrochemical techniques. Emphasis on spectroscopic and chromatographic methods. Visible, infrared and nuclear magnetic resonance spectroscopy. Gas, liquid, column and thin layer chromatography.
2 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 293 Analytical-Instrumental Chemistry I

CHM 299 Independent Study **2-4 Credits**
 The student undertakes an independent project in his/her specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.
Prerequisite: Departmental approval

CHILD CARE

Child Care (CDC) courses may not be used to satisfy the Social Science requirement.

The Child Care program was developed with great flexibility in course selection and can be taken on a part-time basis by those individuals currently employed in the field. Those students who wish to pursue it on a full-time basis should contact the program Coordinator of Child Care. Very close planning and advisement will be necessary to pursue this program to its completion in two years.

MOST CHILD CARE COURSES (THOSE WITH CDC DESIGNATION) ARE OFFERED ONLY IN THE EVENING. FULL-TIME CHILD CARE STUDENTS MUST PLAN FOR BOTH DAY AND EVENING CLASSES.

***CDC 100 Introduction to Education of Young Children** **3 Credits**

An over-all view of nursery education and where it is going. Discussion of various philosophies and methods, programming, scheduling (what should go into scheduling a day for a pre-schooler and when). Focus on social, emotional and physical needs of young children and the importance of the "self concept" for both the child and the adult working with young children. Introduction to the college's Child Care program covering requirements, courses and career information. A required number of observations in pre-schools, nurseries and day care centers in the area, as well as a special laboratory project. Required of Child Care majors.
2 Class Hours, 2 Laboratory Hours

***CDC 115 Music for Young Children** **3 Credits**
 How to develop the whole child through the use of music. This course will be of a practical application for the teacher. Various techniques and methods will be demonstrated through the use of songs, records, eurhythmics, rhythm instruments and creative activities. Class participation will be a vital part of this course. Students will be expected to apply these various methods and activities with young children.
3 Class Hours

***CDC 120 Curriculum Development** **3 Credits**
 A pre-school curriculum for students planning to work in day-care centers and nursery schools. Emphasis on how art, language, math, creative play, science and outdoor play programs are used for the physical, social, emotional and mental development of the young child. Sharing and implementing ideas through special projects and construction and implementation of material related to specified areas. Students will be required to perform certain activities in a nursery school setting or with groups of children. Required of Child Care majors.
2 Class Hours, 2 Laboratory Hours
Prerequisite: CDC 100 Introduction to Education of Young Children

***CDC 140 Art for Young Children** **3 Credits**
 In-depth coverage of art education as it contributes to the pre-school child's emotional, physical and psychological growth. Needs of pre-schoolers in this area and ways to foster creativity and skill acquisition. Materials and methods appropriate for this age. A laboratory experience working with pre-schoolers in art will be required.
2 Class Hours, 2 Laboratory Hours

***CDC 150 Motor Development** **3 Credits**
 Designed to give the student an understanding of normal motor development and how it relates to cognitive and perceptual development. Students will be exposed to programs and activities in motor development for young children.
3 Class Hours

***CDC 160 Nutrition for Young Children** **3 Credits**
 Basics of good nutrition with emphasis on children. Ideas on planning and preparing snacks and meals and teaching good nutrition habits to children. Ideas on fitting nutrition into the nursery education curriculum and tying it to other subjects. Projects for practical application and experience in a nursery school setting. (Not offered in 1983-84 academic year. See DIA 100 for acceptable nutrition course).
2 Class Hours, 2 Laboratory Hours

***CDC 170 Practicum I** **3 Credits**
 Designed to meet the needs of both the experienced and the inexperienced students. The inexperienced student is placed in a classroom setting conducive to the learning of desired teacher competencies, working with an experienced supervising teacher. Six hours per week for twelve weeks in this situation. Self-evaluation as well as being evaluated by others.
 The experienced student is given some credit for work experience. For him/her, the practicum emphasizes self-evaluation according to classroom competencies. Both experienced and inexperienced students in group seminars with a college representative and meeting for individual consultation. Required of Child Care majors.
Prerequisite: 30 hours of counseled coursework
Taught evenings, field work days

***CDC 180 Child Health and Safety** **3 Credits**
 Designed to help students become aware of techniques for promoting general health care and safety standards at children's centers. Red Cross First Aid and Safety Course included.
3 Class Hours

*** TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

***CDC 190 Infants, Toddlers and the Family 3 Credits**

The mother/father/baby triad and the challenges that parenting brings to the young family are examined. Single parents, parental attachment, adoption, positive self image, infant stimulation, teen pregnancy, community support for families, toddler discipline, delayed pregnancy. Gives prospective parents and teachers of young children insight into this critical period of life.

3 Class Hours

***CDC 210 Special Problems in Children 3 Credits**

How to understand and help the child with a special problem. Normal adjustment problems, learning disabilities, physical handicaps, retardation and the emotionally disturbed child. Techniques for the classroom teacher and places to get help. Actual student involvement with children who exhibit these problems. (Not offered in 1983-84 academic year).

2 Class Hours, 2 Laboratory Hours

Prerequisite: PSY 211 Child Development

***CDC 220 Issues and Innovations in Early Childhood Education 3 Credits**

An overview and insight into various philosophies and materials of education for young children, including Montessori, Piaget, open education (comparing English and American schools), affective education, behavior modification. The course aims to develop the competency of the student through practical application.

3 Class Hours

Prerequisite: CDC 100 Introduction to Education of Young Children

***CDC 230 Working with Parents in Nursery Programs 3 Credits**

Designed to introduce the need for the parents' involvement in the education of the young child. Benefits for teachers, parents and children, when teachers and parents work closely together. Consideration of feelings of teachers and parents which help or hinder their working together. Various aspects of working with parents, such as home visiting, group parent meetings, newsletters and written communications, parent conferences and the use of volunteers in the classroom. Part of the course on a workshop basis, and students required to develop a special project to earn their third credit.

2 Class Hours, 2 Laboratory Hours

Prerequisite: CDC 100 Introduction to Education of Young Children

CDC 240 Social Development of Young Children 3 Credits

Explores the developmental, environmental and temperamental aspects of the socialization process. Topics include aggression, cooperation and sharing, moral development, peer interaction, sex-role development, communication in the classroom.

2 Class Hours, 2 Laboratory Hours

***CDC 250 Language in Early Childhood 3 Credits**

A developmental study of language growth in young children and its influence on learning (cognitive abilities, social and behavioral concepts). Contemporary language theories and programs including a diagnostic approach to teaching language (communication skills, reading readiness and literature appreciation) in the pre-school. The student will be expected to spend a number of hours in a special project requiring observations of individual children and language arts programs. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: CDC 100 Introduction to Education of Young Children

***CDC 290 Practicum II 6 Credits**

Designed to be flexible depending upon the needs and interests of the student. Project for experienced students based on the development of these needs and interests. Project must be approved. The experienced student to share ideas from his/her areas of strength in seminar situations.

For the inexperienced student, a classroom situation to conduct a self-evaluation of own competencies as a teacher, as well as being evaluated by others. Work with an experienced supervising teacher. The inexperienced student to spend 9 hours per week in a classroom situation for 12 weeks. Required of Child Care majors.

Prerequisite: CDC 170 Practicum I

Taught evenings, field work days

***CDC 299 Independent Study in Child Care 1-2-3 Credits**

An individual student project in child care beyond the scope or requirements of the courses offered by the department. Under the direction of a faculty member and approved by the program coordinator and department chairman. No more than 3 credits may be acquired toward the Child Care degree in independent study projects.

1-2-3 Class Hours

Prerequisite: 6 Semester hours in Child Care courses

CIVIL ENGINEERING TECHNOLOGY

CIV 110 Introduction to Civil Engineering Technology ½ Credit

Introduction to the College and its policies, placement, transfer and study skills. Reasonable skill in the hand-held calculator to be developed. Outside speakers representing the various sectors of employment.

1 Class Hour

CIV 111 Surveying I 4 Credits

Plane surveying including distance measurement, note keeping, leveling, angle measurement, care and use of instruments, stadia, record searching, deed descriptions, traversing, coordinates, area computation, map inking and sewer stakeout.

2 Class Hours, 6 Laboratory Hours

Corequisite: MAT 141 Algebra and Trigonometry

CIV 112 Surveying II 2 Credits

A continuation of CIV 111 Surveying I including mapping, field astronomy, precise leveling, triangulation, electronic measurements and public land surveys.

1 Class Hour, 3 Laboratory Hours

Prerequisite: CIV 111 Surveying I

CIV 115 Engineering Drawing 2 Credits

Fundamentals of Engineering Drawing including care and use of instruments, linework, lettering, dimensioning, orthographic projection, sections, auxiliary views, detailing and an introduction to architectural drawing.

1 Class Hour, 3 Laboratory Hours

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

CIV 117 Architectural Drafting**2 Credits**

Fundamentals of architectural drafting including floor plans, elevations, sections, details, schedules, plot plans, plumbing layouts, electrical layouts. Emphasis on residential drawings

1 Class Hour, 3 Laboratory Hours**Prerequisite:** CIV 115 Engineering Drawing**CIV 124 Mechanics (Statics)****3 Credits**

Static force systems and equilibrium. Free body diagrams, trusses, graphic statics, spatial force systems, friction, centroids, moments of inertia.

3 Class Hours**Prerequisite:** PHY 141 Physics***CIV 155 Surveying****3 Credits**

Plane surveying including distance measurement, note keeping, compass surveying, leveling, angle measurement, care and use of instruments, stadia, traversing, coordinates, area computation, mapping and records.

2 Class Hours, 3 Laboratory Hours**Prerequisites:** MAT 139 Algebra and MAT 140 Trigonometry or equivalent***CIV 156 Route Surveying****4 Credits**

Horizontal and vertical curves, spirals, sight distances and earthwork. Introduction to computer applications. Laboratory includes problem sessions using the college's computer to solve coordinate geometric problems.

3 Class Hours, 2 Laboratory Hours**Prerequisite:** CIV 155 Surveying***CIV 159 Architectural Drafting I****3 Credits**

Development of working drawings for use in residential type construction. Plot plans, floor plans, elevations, details, mechanical and electrical layouts. Lectures to include construction materials, specifications and methods.

2 Class Hours, 3 Laboratory Hours***CIV 160 Architectural Drafting II****3 Credits**

A continuation of CIV 159 Architectural Drafting I. Development of working drawings for two-story and split-level residences.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 159 Architectural Drafting I***CIV 161 Architectural Drafting III****3 Credits**

Development of a set of working drawings for a small two-story commercial building including floor plans, elevations, sections, details, mechanical and electrical layouts, window and door schedules. Term project. (Not offered in 1983-84 academic year)

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 160 Architectural Drafting II***CIV 163 Plain Concrete****2 Credits**

Cements, aggregates and plain concrete, including the testing of cements and aggregates, the design mixing, testing, placing, curing control and inspection of plain concrete. ASTM and AASHTO standards. (Not offered in 1983-84 academic year).

2 Class Hours***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS****CIV 212 Route Surveying and Photogrammetry****4 Credits**

Route Surveying: Simple and compound curves, vertical curves, spirals and earthwork. Selected topics in route selection, field technique and route design. Computer applications (COGO).

Photogrammetry: Basic optics, geometry of aerial photography, flight planning, ground control, stereoscopy and parallax, stereo pairs, mosaics and plotting instruments.

3 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 111 Surveying I**CIV 215 Strength of Materials****4 Credits**

Concepts of stress and strain. Simple stress, strain, torsion, shear and moment, stresses in beams, beam deflections, statically indeterminate beams, composite members, columns, combined stresses.

4 Class Hours**Prerequisite:** CIV 124 Mechanics (Statics)**CIV 217 Materials Testing****3 Credits**

Composition, properties and testing of construction materials. Major emphasis on plain concrete. Aggregates, cements, admixtures, design and proportioning of concrete mixes, curing and inspection. Bituminous materials and ferrous metals, load and deformation measurements, behavior of materials under load, strain gauges.

2 Class Hours, 3 Laboratory Hours**Corequisite:** CIV 215 Strength of Materials**CIV 224 Reinforced Concrete Design****3 Credits**

Fundamental theory and principles for the design of reinforced concrete. Design, analysis and detailing of rectangular beams. T-beams, beams reinforced for compression, columns and footings. Emphasis on ultimate strength design methods. Theory of prestressed concrete. An integrated design and detailing project.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 215 Strength of Materials**CIV 226 Structural Steel Design****3 Credits**

Fundamental theory and principles necessary for design of simple steel structures. Design, investigation and detailing of beams, columns, tension and compression members and their connections. Composite beams. An integrated design and detailing project.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 215 Strength of Materials***CIV 228 Estimating and Construction Planning****3 Credits**

A systematic approach to estimating building project costs combined with a study of construction management and the critical path method of scheduling.

2 Class Hours, 2 Laboratory Hours**CIV 231 Estimating and Construction Planning****3 Credits**

A systematic approach to estimating building project costs combined with a study of the critical path method of scheduling.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 117 Architectural Drafting**CIV 235 Hydraulics****4 Credits**

Hydraulics including properties of fluids, hydrostatics, fluid motion in or through orifices, nozzles, pipes, weirs, open channels, hydraulic machinery, pipe branches and networks.

3 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 124 Mechanics (Statics)

CIV 236 Construction Management**3 Credits**

Principles of construction management, specification writing, with emphasis on planning, building, scheduling and controlling a project.

3 Class Hours**CIV 238 Architectural Design
and Building Materials****3 Credits**

Design and detailing of commercial buildings including site considerations, space requirements, layout planning, building materials, manufacturing processes, construction methods, working drawings. Emphasis on individual creativity. Semester project.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 117 Architectural Drafting I**CIV 240 Soil Mechanics****3 Credits**

Soil origin and nature, soil density, test borings, gradation compaction, soil water, frost in soil, classification, stress, shear strength, bearing capacity, piles. The laboratory covers ASTM and AASHTO specifications used in classifying and predicting behavior of soils.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** CIV 215 Strength of Materials**CIV 244 Environmental Sanitation****3 Credits**

Population studies, water supply, transportation, distribution and treatment. Sewage collection and treatment, unit operations. Communicable diseases, biological and chemical aspects of water and sewage. Refuse sanitation, air pollution, industrial wastes, radioactivity. (Not offered in 1983-84 academic year).

3 Class Hours**Prerequisite:** CIV 235 Hydraulics***CIV 251 Elementary Structural Analysis I****3 Credits**

Introduction of structural analysis. Reactions, shear and moment diagrams, truss analysis, graphic statics, influence lines, moving loads, approximate analysis of indeterminate structures, deflections. (Not offered in 1983-84 academic year).

3 Class Hours**Prerequisite:** MET 235 or CIV 215 Strength of Materials***CIV 252 Elementary Structural Analysis II****3 Credits**

Continuation of CIV 251 Elementary Structural Analysis I. Deflections, indeterminate beams and frames, Castigliano's theorems, three moment equations, slope deflections, moment distribution, column analogy and plastic analysis. Computer applications. (Not offered in 1983-84 academic year).

3 Class Hours**Prerequisite:** CIV 251 Elementary Structural Analysis I***CIV 255 Reinforced Concrete Design****3 Credits**

Fundamental behavior of reinforced concrete. Design and analysis of rectangular beams, T-beams, beams reinforced for compression, columns and footings. Major emphasis on ultimate strength design methods. (Not offered in 1983-84 academic year).

3 Class Hours**Prerequisite:** MET 235 or CIV 215 Strength of Materials***CIV 257 Structural Steel Design****3 Credits**

Fundamental theory and principles necessary for design of simple steel structures. Design and analysis of beams, columns, tension members, compression members and their connections. Composite beams, framing systems, loads and forces. (Not offered in 1983-84 academic year).

3 Class Hours**Prerequisite:** MET 235 or CIV 215 Strength of Materials***CIV 260 Environmental Sanitation****4 Credits**

Communicable diseases, water requirements and waste volumes, water supplies, transportation and distribution of water, chemical and biological aspects. Water treatment, waste water treatment including biological and physical treatments. Emphasis on municipal systems. Individual systems. (Not offered in 1983-84 academic year).

4 Class Hours***CIV 262 Soil Mechanics****4 Credits**

Origin and nature of soil, soil physics, sampling soil water, flow nets and seepage forces, classification, frost action, stability, retaining walls, piles, and underground conduits. (Not offered in 1983-84 academic year).

4 Class Hours**Prerequisite:** MET 235 or CIV 215 Strength of Materials or permission of instructor.***CIV 266 Hydraulics****3 Credits**

A basic course in theory and practical applications of hydraulics. Properties of fluids, measurements, hydrostatics, dynamic problems of both pipe and open channel flow. Application and limitations of some of the design aids in common use. (Not offered in 1983-84 academic year).

3 Class Hours**Prerequisite:** MET 132 Applied Mechanics or equivalent***CIV 268 Engineering Economics****2 Credits**

Use of compound interest in financing and in determining engineering cost comparisons. Introduction to depreciation methods. Illustrative cases and problems (personal and engineering) including New York State Professional Engineering Examination problems.

2 Class Hours**Prerequisite:** MAT 139 Algebra or equivalent***CIV 270 Highway Design****3 Credits**

Phases of highway design in sequence from initiation to final design. Classification of highways, criteria and controls for both horizontal and vertical alignment, typical section, cost estimate, and other features associated with design. A broad review of the scope and content of final plans, specifications and engineers estimate. (Not offered in 1983-84 academic year).

3 Class Hours**Prerequisite:** CIV 155 Surveying and CIV 156 Route Surveying or permission of instructor.**CIV 299 Independent Study****2-4 Credits**

The student undertakes an independent project in his/her specialty under the guidance of a faculty member. Only one independent course allowed per semester. Consideration may be given to a project involving a work assignment.

Prerequisite: Departmental approval***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

COMMUNICATIONS

COM 110 Introduction to Photography 3 Credits

Basics of camera design and operation, plus the fundamentals of photographic visualization and composition: line, form, color, light, shadow. Darkroom procedures, film processing, basic printmaking, selective printing techniques. (Students must have their own 35mm single lens reflex camera and should expect to pay for their own photographic materials.)

2 Class Hours, 2 Laboratory Hours

COM 120 Introduction to Audio and Video Production 3 Credits

Theory and practice. Emphasis on actual experience with a variety of equipment: microphones, reel to reel and audio cassette tape recorders, black and white and color videotape players and recorders, portable videotape equipment.

2 Class Hours, 2 Laboratory Hours

COM 200 Film, Photography, Television: An Introduction to Image Making 3 Credits

Critical examination of photography, film, television. Processes used in the production of media, as well as important media works.

3 Class Hours

COM 203 Filmmaking 3 Credits

Introduction to the craft of filmmaking. A "hands-on" approach to basic principles of photography, camera operation, lighting, editing used in the making of motion pictures. Introduction to sound recording.

1 Class Hour, 4 Laboratory Hours

CAD/CAM

(Computer Aided Design/Computer Aided Manufacturing)

CAD 200 Introduction to Computer Graphics 3 Credits

Introduction to the college's Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) System. Commands necessary, with appropriate options, to generate basic engineering drawings. Selected topics. Project.

2 Class Hours, 4 Laboratory Hours

Prerequisites: Permission of the instructor only and MAT 141 Algebra & Trigonometry or equivalent and an acceptable background in engineering drawing

CAD 201 Advanced Computer Aided Graphics 3 Credits

Mechanical Design in three dimensions. Work in isometrics. View space and model space commands. Oblique planes, creating new surfaces, ruled surfaces, surfaces of revolution, cutting planes. Place 3D parts into assembly drawings. Execute programs

2 Class Hours, 4 Laboratory Hours

Prerequisite: CAD 200 Introduction to Computer Graphics

CAM 210 Computer Aided Numerical Control I 3 Credits

Numerical control programming and applications using computer graphics. Tool paths are developed, verified, edited and regenerated from part drawings: point to point, contouring, pocket and profile milling and lathe applications. Sheet metal flat pattern development and punching. Inputs are in "APT" Automatic Programmed Tool. Post processing. 2½ axis machining.

2 Class Hours, 4 Laboratory Hours

Prerequisites: CAD 200 Introduction to Computer Graphics. Background in Numerical Control. Permission of instructor.

CAD 220 Printed Circuits, Electrical Schematics and Wiring Diagrams 3 Credits

Fundamentals of computer aided design as used in the field of electricity and electronics. Laboratory work includes layout of schematic and ladder diagrams using previously constructed library parts. Design of printed circuit boards using automatic board routing. Use of extract definition files to obtain a bill of materials.

2 Class Hours, 4 Laboratory Hours

Prerequisites: Permission of instructor and CAD 200 Introduction to Computer Graphics, EET 150 Electronics or equivalent industrial experience.

CAD 230 CAD System Operation 3 Credits

System architecture—physical components. Operating system—task interface, input-output system and file management. Building a system. Day-to-day operating procedures, system failures and recovery procedures. System commands relating to file manipulation, BATCH/EXEC file processing, command tables, peripheral devices, information commands, task functions, error handling and utility commands. Keyfiles, Varpo, Pep and Parex.

2 Class Hours, 3 Laboratory Hours

Prerequisite: CAD 200 Introduction to Computer Graphics

COMPUTER STUDIES COURSES

The CST courses are designed to acquaint students with the computer and its capabilities and to provide opportunities for "hands-on" experience.

Because many college programs and industries depend on the computer to process data rapidly, both transfer-minded students and those preparing for immediate employment after graduation are introduced to the capabilities of the computer.

The College has a large computer system with more than 100 time-sharing terminals capable of supporting both the College's administrative and academic computing concurrently. Microcomputers and microprocessors provide additional laboratory experiences.

Important Information about courses CST 100, CST 110, and CST 111:

The BASIC language taught in CST 100 is included within CST 110 Introduction to Data Processing. CST 111 Introduction to Computer Studies is the first course required for students working for degrees in Computer Studies. It is assumed that students enrolling in CST 111 have some knowledge of computing, either from school courses, from work experience or from self study. If not, they should enroll first in CST 110, a beginning course which assumes no previous computing knowledge.

CST 100 BASIC**1 Credit**

Arithmetic expressions, conditional transfers, conversational programming, loops, subscripted variables, functions and subroutines. Conforms to American National Standard for Minimal BASIC. May not be taken for credit if student takes CST 110 Introduction to Data Processing.

(Half semester)**1 Class Hour, 2 Laboratory Hours****CST 110 Introduction to Data Processing****3 Credits**

Historical development and current influences exerted on our society by the computer. Basic computer concepts including data entry, hardware and software components that comprise a computer system. Introduction to a computer programming language, with emphasis on logical problem definition and documentation using a time sharing system.

3 Class Hours**CST 111 Introduction to Computer Studies****3 Credits**

Computer programming using a structured pseudolanguage including the topics of control structures, arrays, subprograms. Number base conversion and arithmetic. Introduction to machine and assembly language.

3 Class Hours**Prerequisite:** MAT 003B Basic Math Review or equivalent**Recommended Corequisite:** CST 115 Problem Solving with Pascal**CST 112 Computer Logic****3 Credits**

Comprehensive coverage of basic logic gates, computer arithmetic, Boolean Algebra and Karnaugh Mapping, with a view toward circuit simplification. Adders, subtractors, multiplexers, code converters, asynchronous and synchronous counters presented in detail as basic computer building blocks. Interfacing between analog-digital and digital-analog covered as the method of communicating with the computer. Laboratory exercises utilize TTL and CMOS logic chips to reinforce material presented in lectures.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** CST 111 Introduction to Computer Studies**CST 115 Problem Solving with Pascal****3 Credits**

Introduction to problem solving by computer using the structured programming language Pascal. Programming steps include problem definition, outline of solution, selection of algorithms, coding, debugging, testing and validating, documenting, program maintenance. Pascal syntax includes scalar, structured data types, assignment statements and arithmetic expressions, control statements, input and output statements, functions and procedures. Examples will introduce the basic algorithms used in computer science.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** MAT 003B Basic Math Review or equivalent**Prerequisite or Corequisite:** CST 111 Introduction to Computer Studies**CST 116 RPG II****3 Credits**

Fundamentals of RPG (Report Program Generator) programming language. Beginning language for small business installations, especially those converting manual or unit record systems to computer. Explanation of specification sheets, internal logic, branching and table look-up operations.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** One CST (computer studies) course**CST 118 Computer Programming—COBOL****3 Credits**

Fundamentals of ANSI COBOL applied to solutions of commercially oriented problems. A number of problems assigned for execution on the computer.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** One CST (computer studies) course**CST 120 Computer Programming—FORTRAN****3 Credits**

Programming solutions to business problems utilizing the FORTRAN IV language. Emphasis on documentation procedures, techniques of programming and error analysis, simulation of business data processing in a laboratory environment. For business and data processing students.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** One CST (computer studies) course**CST 122 Scientific Computer Programming
—FORTRAN****3 Credits**

Introduction to problem solving techniques using FORTRAN including development of an algorithm, flow charting, program writing, debugging, storage and execution, input and output, loop techniques, array manipulation, file control and control of on-line equipment, structured programming, terminal and batch operations. Material to be covered taken from student's area of study. For engineering technology and data processing students.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** Working knowledge of algebra and trigonometry**CST 124 Computer Programming for Engineers****3 Credits**

FORTRAN programming with application in engineering, calculus and statistics. Time sharing, program encoding and decoding. Programming topics include FORTRAN syntax, looping, data representation, function and subroutines, multi-dimensional arrays. Simulation of engineering processes and graphical displays. For Engineering Science and Computer Science students.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** MAT 161 Pre-Calculus Mathematics or its equivalent**CST 125 Assembly Programming—MACRO 10****3 Credits**

Binary and octal arithmetic, binary complements, ASCII and SIXBIT codes, direct and indirect addressing, indexing, branching and counting, data transmission, fixed point arithmetic, subroutines, input-output. (Not offered during 1983-84 academic year).

2 Class Hours, 2 Laboratory Hours**Prerequisite:** CST 111 Introduction to Computer Studies and one programming language**CST 126 Assembly Programming—BAL****3 Credits**

System/360 and 370 overview, binary and hexadecimal arithmetic, relative addressing, machine and assembly code, instruction formats, type formats and boundaries, input/output techniques and data sets, decimal operations, logical instructions, branching and looping, subroutines, fixed point operations.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** CST 111 Introduction to Computer Studies and two programming courses**CST 130 PL/1****3 Credits**

Introduction to PL/1, a general purpose language capable of conveniently handling both scientific and business problems. Basic program elements, nesting, looping, string techniques, arrays and structures, procedures, input/output and formatting.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** One programming language or instructor's permission

CST 140 Computer for Chemists**3 Credits**

Introduction to the application of both large time-shared computers and microcomputers to problems in chemistry. Principles of structured programming using FORTRAN including algorithm development, flow charting, debugging and execution. Microcomputer high level languages, operating systems and hardware, and introduction to its use in the control of laboratory equipment, and in collection, storage and processing of laboratory data.

2 Class Hours, 2 Laboratory Hours

Corequisites: MAT 142 Applied Calculus 1 or MAT 163 Calculus with Analytic Geometry 1 or MAT 171 Engineering Calculus with Analytic Geometry 1 and CHM 146 Chemistry or CHM 162 Chemistry.

**CST 141 Fortran Programming with
Graphic Applications****3 Credits**

Introduction to problem solving techniques using Fortran. Development of steps to solve a problem (algorithm), use of a text editor, terminal operation, file storage and retrieval, program writing, debugging and execution and program documentation. Components include input/output, formatting, loop techniques, array manipulation, use of complex data, subroutines, sequential access data files. Graphic applications include figure creation, scaling, plots of X-Y data, equations and polar plots.

3 Class Hours, 2 Laboratory Hours

Corequisite: MAT 141 Algebra and Trigonometry

CST 150 APL**3 Credits**

An introduction to the powerful array handling computer language APL. Operations on scalars, vectors, matrices, arrays of any size or shape. Primitive and user defined functions. Editing and workspace management. Business and scientific applications.

2 Class Hours, 2 Laboratory Hours

Prerequisite: Two 3-credit hour programming language courses and MAT 139 Algebra or equivalent

CST 200 Systems Analysis**3 Credits**

Principles of systems analysis, problem solving and implementation of computer systems including the importance of standards, procedures, security and documentation. Each student to complete a programming project utilizing his/her knowledge from this and other Computer Studies courses. A team case study approach and guest speeches provide the format of work sessions.

2 Class Hours, 2 Laboratory Hours

Prerequisite: One programming language or instructor's permission

CST 202 Advanced Pascal with Data Structures**3 Credits**

Static and dynamic data structures. Choice of proper structure to organize data. Arrays, records, files, linked lists, trees, stacks, queues and directed graphs with applications. Programming will be done in Pascal.

2 Class Hours, 2 Laboratory Hours

Prerequisites: CST 115 Problem Solving with Pascal and MAT 139 Algebra or equivalent mathematical preparation

CST 205 Advanced FORTRAN with Graphics**3 Credits**

A further study of the proper way to write FORTRAN programs. Use of logical structures to define complicated systems, use of subroutines, simulation programming, file structures, queues, searching, sorting. Emphasis on use of school's plotter and graphics terminals. Class project involving graphics, statistics.

2 Class Hours, 2 Laboratory Hours

Prerequisite: CST 120 or CST 122 Computer Programming—FORTRAN or CST 124 Computer Programming for Engineers

CST 217 Advanced RPG II**3 Credits**

Multiple content breaks, processing within limits, exception output, arrays, tables and sorts. Special emphasis on sequential, indexed and direct disk file techniques. Laboratory exercises business oriented and run by students in a hands-on environment. Techniques taught are applicable to an actual business environment.

2 Class Hours, 2 Laboratory Hours

Prerequisite: CST 116 RPG II

CST 218 Advanced COBOL**3 Credits**

A second course in the use of the COBOL language as a means of implementing computerized solutions to data processing problems. Batch and interactive processing, various file access techniques, use of advanced language statements and of various utilities available to the COBOL programmer.

2 Class Hours, 2 Laboratory Hours

Prerequisite: CST 118 COBOL

CST 220 Introduction to Microprocessors**3 Credits**

Digital codes, microprocessor definitions and terms, flow charting, branching, flags, indexing and extended addressing, stack operations, subroutines and system interrupts. Such interfacing concepts as rams, clocks, input and output, buses, tri-states. Extensive use of the 6800 microprocessor.

2 Class Hours, 2 Laboratory Hours

Prerequisites: CST 112 Computer Logic and one programming language

CST 222 Topics in Computer Systems**3 Credits**

Topics in this course acquaint students with current programming techniques and equipment. They may include microprocessor programming and interfacing; scheduling, queueing, spooling, time-sharing, file manipulation with DEC-10; microcomputer programming and graphics; data communications systems; introduction to CAD/CAM.

2 Class Hours, 2 Laboratory Hours

Prerequisite: CST 205 Advanced FORTRAN or permission of instructor

CST 230 Assembly for Microprocessors**3 Credits**

Assembly language for standard microprocessors.

2 Class Hours, 2 Laboratory Hours

Prerequisites: CST 126 Assembly Programming—BAL, CST 220 Introduction to Microprocessors or one 3-credit high level programming language

CST 297 Cooperative Work Experience**1-3 Credits**

Cooperative education in computing is available to full-time students. On-the-job experience may be obtained by working with businesses, industries and offices whose operations require the use of computers. To be eligible a student must maintain a cumulative grade point average of 2.5, with a 3.0 average in CST courses, and have no F grades.

CST 299 Independent Study**1-3 Credits**

The student undertakes an independent project, under the guidance of a faculty member, which is beyond the scope of courses currently offered by the department. Only one independent study project allowed per semester.

CRIMINAL JUSTICE

Criminal Justice (CRJ) courses may not be used to satisfy the Social Science requirement.

The Criminal Justice program was developed with great flexibility in course selection and can be taken on a part-time basis by those individuals currently employed in the field. Those students who wish to pursue it on a full-time basis should contact the Program Coordinator of Criminal Justice. Very close planning and advisement will be necessary to pursue this program to its completion in two years.

***CRJ 101 Introduction to Criminal Justice 3 Credits**

Overview of the major components of the criminal justice system—law enforcement, prosecution, trial courts and corrections. A systems approach is utilized with an emphasis on the structure, functions and interdependence of these and other criminal justice system components. (Formerly CRJ 100).

3 Class Hours

CRJ 115 Juvenile Justice System 3 Credits

Overview of the juvenile justice system, including the history, process, status and philosophy of the juvenile court. Law enforcement handling of juveniles, various theories of delinquency causation, correctional programs and alternative methods of dealing with juvenile offenders. (Formerly CRJ 250).

3 Class Hours

THE FOLLOWING CRIMINAL JUSTICE COURSES ARE TAUGHT IN THE EVENING ONLY

***CRJ 105 Introduction to Corrections 3 Credits**

Overview of the corrections components of the criminal justice system, tracing the history of corrections in the United States. Relationships and interdependencies of corrections with the court and law enforcement components of the criminal justice system and a discussion of the theoretical basis for the four major types of correctional models. (Formerly CRJ 240).

3 Class Hours

***CRJ 125 Penal Law 3 Credits**

Essential elements of the various crimes under the New York State Penal Law. The concepts of culpability and criminal defenses recognized under the New York State Penal Law as they relate to murder, rape, robbery, burglary, arson, assault, drug offenses, disorderly conduct and harassment. (Formerly CRJ 210).

3 Class Hours

***CRJ 130 Introduction to Security 3 Credits**

Organization and management of the security function in industry, business, government and institutions. The protection of personnel, facilities and other assets, as well as administrative, legal and technical problems of loss prevention and control. (Formerly CRJ 260).

3 Class Hours

***CRJ 212 Criminal Procedure and Constitutional Law 3 Credits**

The right to counsel, search and seizure, confessions, lineups, electronic surveillance, probation and parole. (Formerly CRJ 120).

3 Class Hours

Prerequisite: CRJ 101 Introduction to Criminal Justice

***CRJ 215 Police Administration 3 Credits**

Fundamentals of organization, supervision and over-all management of police and civilian personnel. Designed to supply a background for the student in dealing with the complexities involved in the management aspects of various police agencies. (Formerly CRJ 110).

3 Class Hours

Prerequisite: CRJ 101 Introduction to Criminal Justice

***CRJ 220 Evidence for Law Enforcement 3 Credits**

A practical examination of the law of evidence, as it pertains to the function of persons engaged in law enforcement. Fundamental concepts and terminology, due process of obtaining evidence in criminal investigations, search and seizure, confessions, identification to the process of presenting evidence at hearings and trials of criminal cases (scientific evidence, direct and cross examination of witnesses).

3 Class Hours

Prerequisites: CRJ 101 Introduction to Criminal Justice and CRJ 125 Penal Law.

CRJ 225 Security Administration 3 Credits

Administration of public and private security efforts; problems in protection program development and evaluation, functions of various levels of personnel, company/organizational relations, document and personnel access control, detection systems, devices, and equipment, emergency and disaster planning, new directions in the field of security.

3 Class Hours

Prerequisite: CRJ 130 Introduction to Security or permission of the instructor/department chairperson

***CRJ 230 Criminal Investigation 3 Credits**

Basic principles of investigation as they relate to the collection, preservation, identification and examination of physical evidence. Techniques for locating and interviewing witnesses and for interrogating suspects. Common myths associated with detective work.

3 Class Hours

Prerequisites: CRJ 101 Introduction to Criminal Justice and CRJ 125 Penal Law

***CRJ 235 Understanding and Changing Criminal Behavior 3 Credits**

In-depth examination of the various theories utilized in explaining and dealing with criminal behavior. Theories emanating from the fields of psychology, sociology and biology provide the basis of this examination. A seminar approach. Participation of students will be expected to document and report their activities.

3 Class Hours

Prerequisites: CRJ 101 Introduction to Criminal Justice and CRJ 105 Introduction to Corrections.

***CRJ 255 Special Topics in Criminal Justice 1-3 Credits**

The specific area to be covered will be based upon identified needs and interests of criminal justice students. This course also provides a forum for professional individuals in the criminal justice field with a particular expertise to share their knowledge and skills with students.

1-3 Class Hours

Prerequisites: CRJ 101 Introduction to Criminal Justice and 2 other CRJ courses.

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

CRJ 299 Independent Study

An individual student project concerned with advanced level work beyond the scope or breadth of regular courses. A specific area or topic is investigated under the direction of a faculty member. Must be approved by department chairperson.
Prerequisite: CRJ 101 Introduction to Criminal Justice and 6 credits in CRJ courses.

1-3 Credits**DENTAL HYGIENE****DEN 101 Dental Hygiene I****2 Credits**

Contemporary practice of dental hygiene and factors affecting such practice. Fundamentals of instrumentation, exploring, probing, scaling, and polishing on student patients. Clinical experience in the basic techniques of preparation for the dental hygiene appointment, patient evaluation and data collection and patient treatment.
2 Class Hours
Corequisite: DEN 101L Dental Hygiene I Laboratory

DEN 101L Dental Hygiene I Laboratory**2 Credits**

Practical application in an actual clinical setting of the principles described in the lecture mode of this course.
6 Laboratory Hours
Corequisite: DEN 101 Dental Hygiene I

DEN 102 Dental Hygiene II**4 Credits**

Continuation of DEN 101 Dental Hygiene I. Clinical experience in the basic techniques of dental hygiene care including treatment planning, patient appraisal and instrumentation. Theory in ethics, jurisprudence, professional organizations, emergency medical and dental procedures and care of patients with special medical problems and oral physiotherapy and oral health instruction.

4 Class Hours

Prerequisites: DEN 101 Dental Hygiene I, BIO 131 Human Biology I and DEN 103 Oral Anatomy and Physiology
Corequisite: DEN 102L Dental Hygiene II Clinic

DEN 102L Dental Hygiene II Clinic**2 Credits**

Clinical dental hygiene practice.
8 Laboratory Hours
Corequisite: DEN 102 Dental Hygiene II

DEN 103 Oral Anatomy and Physiology**4 Credits**

Normal structure and function of the oral cavity (microscopic and gross). Laboratory work provides experience with traditional approaches to the study of oral anatomy and physiology.
2 Class Hours, 4 Laboratory Hours

DEN 106 Clinical Dental Radiography**1 Credit**

Nature and generation of radiation, understanding of radiation hygiene and safety, basic concepts of the X-ray machine. Intraoral dental radiographic techniques, film processing and mounting, interpretation of radiographic factors and recognition of anatomical landmarks.

1 Class Hour

Prerequisites: DEN 101 Dental Hygiene I and DEN 103 Oral Anatomy and Physiology and BIO 131 Human Biology I.
Corequisite: DEN 106L Clinical Dental Radiography Laboratory

DEN 106L Clinical Dental Radiography Laboratory**1 Credit**

Practical application on manikins and patients of principles described in lecture mode.

2 Laboratory Hours**Corequisite:** DEN 106 Clinical Dental Radiography**DEN 201 Dental Hygiene III****2 Credits**

Continuation of DEN 102 Dental Hygiene II. Integration of theory with clinical experience in various oral hygiene preventive procedures and essential business aspects of a dental office. Emphasis on planning and execution of the total treatment plan concept.

2 Class Hours

Prerequisites: DEN 102 Dental Hygiene II, DEN 106 Clinical Dental Radiography and BIO 160 Microbiology
Corequisite: DEN 201L Dental Hygiene III Clinic

DEN 201L Dental Hygiene III Clinic**3 Credits**

Clinical dental hygiene practice.
12 Laboratory Hours
Corequisite: DEN 201 Dental Hygiene III

DEN 202 Dental Hygiene IV**2 Credits**

Continuation of DEN 201 Dental Hygiene III. Clinical experience in all phases of dental hygiene care including selected expanded functions.

2 Class Hours

Prerequisites: DEN 201 Dental Hygiene III, DEN 204 General and Oral Pathology and DEN 205 Periodontology
Corequisite: DEN 202L Dental Hygiene IV Clinic

DEN 202L Dental Hygiene IV Clinic**3 Credits**

Clinical dental hygiene practice.
12 Laboratory Hours
Corequisite: DEN 202 Dental Hygiene IV

DEN 204 General and Oral Pathology**3 Credits**

Broad picture of the disease process through the study of common general diseases, their causes, results and treatment. Emphasis on the principles of inflammation, healing and repair, oral diseases, their causes, recognition and treatment.
3 Class Hours
Prerequisites: DEN 102 Dental Hygiene II, BIO 132 Human Biology II and BIO 160 Microbiology

DEN 205 Periodontology**2 Credits**

Overall study of the pathology of the supporting structures surrounding the teeth. Special emphasis on recognition and treatment of the periodontal patient within the scope of the dental hygienist.

2 Class Hours

Prerequisites: DEN 102 Dental Hygiene II, DEN 106 Clinical Dental Radiography, BIO 132 Human Biology II and BIO 160 Microbiology

DEN 206 Dental Pharmacology**2 Credits**

Pharmacology as it affects the clinical practice of dental hygiene and dentistry. Drugs commonly used in dentistry and correct methods for their use. Emphasis on pharmacological aspects of anesthesia.

2 Class Hours

Prerequisites: BIO 132 Human Biology II and BIO 160 Microbiology

DEN 209 Nutrition **3 Credits**
 Basic nutrition principles, including functions, sources, conditions resulting from excessive or inadequate intake of each nutrient. Study of diet planning, dietary guidelines, weight control, nutrition care throughout life cycle. Special emphasis on the relation of nutrition to the oral cavity and its practice in the dental office. Interviewing, oral health diet score, nutritional counseling.
3 Credit Hours
Prerequisite: DEN 102 Dental Hygiene II

DEN 210 Dental Materials **3 Credits**
 Composition, chemical and physical properties and use of materials used in the dental laboratory and operator. Laboratory sessions will provide experience in performing common dental laboratory procedures and background for clinical application of expanded functions.
2 Class Hours, 2 Laboratory Hours
Prerequisite: DEN 201 Dental Hygiene III

DEN 213 Public Health **3 Credits**
 Principles of public health and fundamentals of assessing, planning, implementing and evaluating of public health care with emphasis on community dental health. Laboratory experience in assessing, planning, implementing and evaluating care for a particular target population.
2 Class Hours, 2 Laboratory Hours
Prerequisite: DEN 102 Dental Hygiene II

DEN 214 Dental Specialties **2 Credits**
 Overview of dental specialties with emphasis on those specialties not covered in other courses in the Dental Hygiene curriculum—endodontics, orthodontics, pedodontics.
2 Class Hours
Prerequisite: DEN 201 Dental Hygiene III

DIETETIC ASSISTANT

***DIA 100 Introduction to Principles of Basic Nutrition** **3 Credits**
 Designed to develop an awareness and appreciation of the importance and scope of the science of nutrition. Factors contributing to individual differences in food and eating patterns, nutritional needs at various stages of life, functions and sources of major nutrients, sociological impacts of nutrition. May be used as Child Care elective in AAS program.
3 Class Hours

To take the following courses, students must be employed in the field so that they can schedule directed practice hours.

***DIA 101 Nutrition** **3 Credits**
 The social, cultural, psychological and physiological functions of food. Nutrition care throughout the life cycle. Special consideration given to modifications of the basic diet to meet the needs of the resident in health care facilities. Techniques of interviewing and medical ethics.
2 Class Hours, 4 Directed Practice

***DIA 102 Institution Food Preparation** **3 Credits**
 Principles of food preparation, standardization of recipes, menu structure and planning. Serving, merchandising and promotion of food items. Various food preparation equipment and techniques. Sanitary food handling and holding practices emphasized.
2 Class Hours, 4 Directed Practice

***DIA 201 Food Management Systems** **3 Credits**
 An introduction to the health field and its inter-relationships. The concept of management including the principles of organizing, evaluating, and the decision making process. Control through specification, purchasing, inventory and cost analysis. Equipment, housekeeping, sanitation and safety practices.
2 Class Hours, 4 Directed Practice

***DIA 202 Personnel Management** **3 Credits**
 Leadership and supervisory techniques. Implications of authority and responsibilities. Understanding and communicating with workers and co-workers. Employee recruitment, training and evaluation. Morale and labor relations. Analysis of duties and work simplification performance and motivation.
2 Class Hours, 4 Directed Practice

ECONOMICS

ECO 101 Consumer Economics **3 Credits**
 Institutions and forces directly affecting the consumer: consumer income and expenditure patterns, personal finance, credit and tax problems. Personal investment alternatives. Impact of the consumer movement on the individual and society.
3 Class Hours

ECO 104 Labor Economics and American Industry **3 Credits**
 Interaction among business, labor and government. Analysis of the causes of unemployment and income inequality. Connection between productivity, wages, prices and employment and application of anti-trust and labor laws to firms and unions.
3 Class Hours

ECO 110 Introduction to Micro-Economics **3 Credits**
 Supply, demand and the market system as they relate to contemporary economic problems including poverty, energy, the environment and urban decay. The allocation of resources under conditions of competition and various degrees of monopoly. Rationale behind anti-trust laws and other governmental attempts to control monopoly power and promote economic well-being. Comparative economic systems.
3 Class Hours

ECO 111 Introduction to Macro-Economics **3 Credits**
 Causes of unemployment and inflation and the government's efforts to control them. Problems of economic growth as they relate to our economy and to other countries, developed and underdeveloped. International trade and finance problems.
3 Class Hours

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

ECO 120 American Economic History **3 Credits**
 A topical approach to the economic impetus behind the growth and development of the United States. Colonial heritage and the market system, population and natural resources, agriculture, transportation, labor, business, the capital market and the influence of government. Understanding today's economic problems by observing how they developed historically. (Not offered during 1983-84 academic year)
3 Class Hours

ECO 140 Economics of Urban Problems **3 Credits**
 Application of economic analysis to urban problems, an understanding of the economic forces that affect housing, transportation, poverty, crime, land use, the financing of urban services and the urban future.
3 Class Hours

ECO 253 Money and Banking **3 Credits**
 An examination of money, credit and financial institutions, emphasizing how the monetary system influences economic activity. Nature and functions of money, the commercial banking system and other financial institutions, the roles of the Federal Reserve System and the Treasury, monetary policy and international money problems
3 Class Hours
Prerequisite: ECO 111 Introduction to Macro-Economics

ECO 299 Independent Study **1-3 Credits**
 An individual student project in economics which is beyond the scope or requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairperson.
Prerequisite: 3 semester hours in economics

ELECTRICAL ENGINEERING TECHNOLOGY

EET 100 Introduction to Electrical Engineering Technology **½ Credit**
 Introduction to Electrical Engineering Technology, career opportunities, transfer opportunities, study skills and college services. An association with industry is established through field trips and panel discussions involving industry representatives. Reasonable proficiency in the use of the hand held calculator is developed.
1 Class Hour

‡ **EET 111 Electrical Construction Laboratory I** **2 Credits**
 Basic knowledge about today's electrical equipment. Experience in the installation, fabrication and maintenance of electrical equipment by means of "hands-on" approach. Shop safety and the National Electrical Code. Basic residential and commercial wiring procedures, basic measuring techniques, fundamentals of basic machine operations.
1 Class Hour, 3 Laboratory Hours

EET 112 Electrical Construction Laboratory II **1 Credit**
 Advanced wiring methods, fractional horsepower motor and appliance troubleshooting, introduction to residential and commercial lighting and power layout-design
3 Laboratory Hours
Prerequisite: EET 111 Electrical Construction Laboratory I

‡ **EET 121 Electrical Circuits & Laboratory** **4, 1 Credits**
 Fundamentals of electrical circuits and application of circuit laws, theorems and measuring techniques to both d-c and a-c single and polyphase circuits.
4 Class Hours, 3 Laboratory Hours

*‡ **EET 125 Circuits I** **3 Credits**
 D-c circuits, including loop and nodal analysis, superposition, Thevenin's and Norton's theorems, RL and RC time constants.
2 Class Hours, 2 Laboratory Hours
Prerequisite: MAT 139 Algebra or equivalent
Student may take MAT 139 concurrently with this course

*‡ **EET 126 Circuits II** **3 Credits**
 A continuation of the study of circuits concepts related to single and three-phase alternating current. Resonance, network analysis, power.
2 Class Hours, 2 Laboratory Hours
Prerequisites: MAT 140 Trigonometry or equivalent and EET 125 Circuits I
Student may take MAT 140 concurrently with this course

EET 130 Engineering Drawing **1 Credit**
 Principles of projection. Development of drafting skills, lettering and proper line construction. Dimensioning and tolerancing, with an emphasis on shop processes. Use of auxiliary views and sectioning. Preparation of assembly drawings, materials lists, schematic and wiring diagrams.
3 Laboratory Hours

‡ **EET 150 Electronics I & Laboratory** **4, 1 Credits**
 Principles of resonance, inductive coupling, transformers, RL and RC time constants, rectification. Characteristics of electronic devices including diodes, bipolar transistors, field effect transistors, tubes, unijunction transistors, thyristors and special purpose devices. Biasing techniques, load line analysis, rule-of-thumb design, hybrid parameters. Computer used to solve problems.
4 Class Hours, 3 Laboratory Hours
Prerequisites: MAT 141 Algebra and Trigonometry and CST 141 FORTRAN Programming with Graphic Applications and EET 121 Electrical Circuits

EET 162 Computer Aided Network Analysis **3 Credits**
 Computer analysis of complex electrical and electronic networks by application of network theorems. Use of a second computer language (BASIC) to display the response of two port networks. Use of the computer to apply matrix methods to the analysis of complex circuits and the solution of network problems.
3 Class Hours
Prerequisites: CST 141 FORTRAN Programming with Graphic Applications and EET 121 Electrical Circuits and MAT 141 Algebra and Trigonometry

EET 181 Installation and Maintenance of Electric Motors **2 Credits**
 Basic understanding and application of electrical motors to modern industrial machines. D-c motors, single phase and polyphase alternating current motors. Emphasis on factors contributing to appropriate motor selection for newly designed machines. Motor control systems. Installation and routine maintenance.
2 Class Hours

* **TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

‡ **These courses carry separate grades for lecture and laboratory**

‡ **Combined lecture-laboratory courses; final grade depends on successful completion of both parts**

EET 183 Applied Electricity**3 Credits**

Practical applications of electrical concepts as applied to basic circuits, motors and transducers. Laboratory work includes demonstration of basic electrical concepts using measuring instruments such as digital multimeters, oscilloscopes, function generators, counters, wattmeters, bridges and transducers as sensors.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** PHY 142 Physics and MAT 141 Algebra and Trigonometry**† EET 186 Electronics****3 Credits**

Practical applications of electronic concepts as applied to solid state devices, amplifiers, power supplies, oscillators, timers, multivibrators and basic logic devices and transducers. Laboratory work includes practical applications of concepts by students, operation of common electronic instruments such as oscilloscope, curve tracer, function generator and counter.

2 Class Hours, 3 Laboratory Hours**Prerequisite:** EET 183 Applied Electricity**EET 230 Electronic Design and Fabrication****1 Credit**

Selection, package design and construction of an electronic project and preparation of related drawings. Use of various manufacturing processes to fabricate the project. Use of industrial standard drafting practices to properly describe the operations. Chassis layout, printed circuit board design and etch, wiring, soldering, enclosure.

3 Laboratory Hours**Prerequisites:** EET 130 Engineering Drawing and EET 251 Electronics II and EET 112 Electrical Construction Laboratory II*** EET 235 Electrical and Electronics Drawing****2 Credits**

Graphic representation of circuitry related to the electrical and electronics fields. Use of industrial standards and symbolism to draw electronic, schematic and wiring diagrams, printed circuit layout and electronics assemblies. Construction of one-line power distribution diagrams, industrial motor control diagrams and a commercial lighting layout. (Not offered during 1983-84 academic year).

1 Class Hour, 2 Laboratory Hours**Prerequisites:** MET 113 Engineering Drawing 1 and EET 255 Electronics I**† EET 241 Electrical Machines****and Controls I & Laboratory****3, 1 Credits**

Theory, operation and application of d-c machines, and their magnetic and solid state control. Theory and application of single and polyphase power transformers and rectifiers.

3 Class Hours, 3 Laboratory Hours**Prerequisite:** EET 150 Electronics I**† EET 242 Electrical Machines and Controls II & Laboratory****4, 1 Credits**

Generation and use of three-phase power. Theory, operation and application of a-c motors and controls. Principles of open and closed loop systems. Theory, operation, application of industrial equipment used in control systems.

4 Class Hours, 3 Laboratory Hours**Prerequisite:** EET 241 Electrical Machines and Controls I***† EET 245 Electrical Machines****4 Credits**

D-c and a-c machine theory, application and control. Single phase and polyphase transformers, solid state rectification.

3 Class Hours, 2 Laboratory Hours**Prerequisite:** EET 126 Circuits II**† EET 251 Electronics II & Laboratory****3, 1 Credits**

Basic configurations of active devices, equivalent circuits, performance predictions, frequency response, Bode plots, negative feedback, operational amplifiers, integrated circuits, active filters.

3 Class Hours, 3 Laboratory Hours**Prerequisite:** EET 150 Electronics I**† EET 252 Electronics III & Laboratory****3, 1 Credits**

Passive and active waveshaping, non-sinusoidal oscillators, sinusoidal oscillators, large signal amplifiers, regulated power supplies, elements of communications systems.

3 Class Hours, 3 Laboratory Hours**Prerequisite:** EET 251 Electronics II***† EET 255 Electronics I****4 Credits**

Principles of amplification, rectification, filtering and regulation. Characteristics of electronic devices including diodes, bipolar transistors, field effect transistors, operational amplifiers, tubes, unijunction transistors, thyristors and special purpose devices. Biasing techniques, load line analysis and equivalent circuits.

3 Class Hours, 2 Laboratory Hours**Prerequisite:** EET 126 Circuits II***† EET 256 Electronics II****4 Credits**

Basic configurations of active devices, equivalent circuits, performance predictions, frequency response, Bode plots, negative feedback, operational amplifiers, integrated circuits, active filters.

3 Class Hours, 2 Laboratory Hours**Prerequisite:** EET 255 Electronics I***† EET 257 Electronics III****4 Credits**

Passive and active waveshaping, non-sinusoidal oscillators, sinusoidal oscillators, large signal amplifiers, regulated power supplies, timers, phase locked loops and elements of communications systems.

3 Class Hours, 2 Laboratory Hours**Prerequisite:** EET 256 Electronics II**† EET 267 Digital Electronics and Microprocessors I & Laboratory****3, 1 Credits**

Use of electronic circuitry to solve mathematical problems. Digital computer hardware and number systems. Building blocks, sub-system and system operations. Construction and use of monolithic integrated circuits including applications and limitations of available families. Appropriate laboratory exercises provide hands-on experience in the application of digital circuits. (Not offered during 1983-84 academic year).

3 Class Hours, 2 Laboratory Hours

Prerequisite: EET 150 Electronics I or EET 255 Electronics I and CST 122 Scientific Computer Programming—FORTRAN or CST 141 FORTRAN Programming with Graphic Applications

*** TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS****† These courses carry separate grades for lecture and laboratory****‡ Combined lecture-laboratory courses; final grade depends on successful completion of both parts**

***EET 268 Digital Electronics and Microprocessors II**

4 Credits

Use of a modern microcomputer in real time control applications, such as testing complex circuitry using microcomputers, display systems, A to D conversions, timing. Troubleshooting microcomputers, internal operations, and recent developments. Programming in assembly language with an introduction to HLL-emphasized as a tool for interfacing. Laboratory exercises provide experience on many different systems with different end applications. (Not offered during 1983-84 academic year).

3 Class Hours, 2 Laboratory Hours

Prerequisite: EET 267 Digital Electronics and Microprocessors I

EET 299 Independent Study

2-4 Credits

The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a job-related assignment. Any independent study project is based on instructor availability.

Prerequisite: Departmental Approval

ENGINEERING

EGR 100 Orientation

0 Credits

Attendance at these sessions assures the Engineering Science student a smooth transition into and out of Broome Community College. Guest speakers discuss common problems engineering students encounter. Representatives from transfer schools introduce their respective institutions to students. Common exams will be scheduled during these sessions.

2 Class Hours

EGR 110 Introduction to Technologies

½ Credit

Introduction to the college and its policies, placement, transfer and study skills. Reasonable proficiency in the use of the hand calculator is developed. For engineering technology freshmen.

1 Class Hour

***EGR 130 Professional Engineers**

Review Course

5 Credits

For those qualified who plan to take the New York State Licensing Examination. New requirements for the National Examination. Physics, statics, dynamics, mechanics of materials, electrical theory, economic analysis, mathematics, fluid mechanics, thermodynamics, systems analysis, computer science. Chemical, civil, electrical and mechanical engineering problems. This course can also serve as a guide for self-study for any engineer who wishes to review the broad subject areas in engineering. This is a 30-week course.

2½ Class Hours

EGR 150 Engineering Graphics

2 Credits

Fundamental course in drawing techniques and interactive computer graphics, graphing, orthographic projecting, dimensioning, sections, true length, true size, relationships between lines and planes, interactive three-dimensional graphics. For Computer Science and Engineering Science students.

1 Class Hour, 2 Laboratory Hours

EGR 281 Mechanics (Statics)

3 Credits

Fundamental concepts of the statics of rigid bodies developed by using a vector analysis approach. Force systems, centroids and centers of gravity, analysis of structures, shear and bending moments, friction and moments of inertia.

3 Class Hours

Prerequisite: 1 year of Calculus and PHY 181 Physics I

EGR 282 Mechanics (Dynamics)

3 Credits

Concepts using vector analysis approach to kinematics and kinetics of particles, systems of particles, kinematics and kinetics of rigid bodies. Forces, mass, acceleration impulse, momentum, work and energy techniques.

3 Class Hours

Prerequisite: EGR 281 Mechanics (Statics)

EGR 285 Electrical and Electronic Circuits

3 Credits

Units, Coulomb's Law, Ohm's Law, Faraday's Law, Kirchhoff's Law, energy and power. Resistance, inductance and capacitance parameters. Series and parallel circuits, superposition theorem, network analysis by mesh currents, nodal techniques. Thevenin's Theorem, network reduction. Techniques for solving step response, pulse response, forced response, natural response and complete response. A-c circuits, phasors, impedances, resonance. Transistor parameters, linear equivalent circuits, biasing methods. Single, double and triple amplifier response in terms of gain, bandpass. Coupling techniques.

3 Class Hours

Prerequisite: 1 year of calculus and 1 year of physics including electricity and magnetism or permission of instructor

EGR 286 Engineering Analysis

1 Credit

Statistical treatment of experimental data, introduction to microprocessors with digital logic.

1 Class Hour

Prerequisite: 1 year of calculus and a high-level programming language

EGR 287 Engineering Science Laboratory I

1 Credit

Experimentation in electrical and electronic circuits, digital logic, heat and sound.

3 Laboratory Hours

Prerequisite: 1 year of calculus and 1 year of laboratory physics

Co-requisite: EGR 285 Electrical and Electronic Circuits

EGR 288 Engineering Science Laboratory II

1 Credit

Experimentation in atomic and nuclear physics, light and microprocessors.

3 Laboratory Hours

Prerequisite: EGR 287 Engineering Science Laboratory I

Co-requisite: EGR 286 Engineering Analysis

EGR 299 Independent Project

2-4 Credits

The student undertakes an independent project in his/her specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.

Prerequisite: Departmental Approval

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

ENGLISH

After completing a writing sample, students may be directed by the English Department to enroll in ENG 100 Basic Language Skills, a special writing center course. Students generally begin a composition sequence with ENG 110 Written Expression I.

ENG 100 Basic Language Skills

3 Credits

Writing workshops designed to improve a student's mastery of composition skill, including patterns of sentence structure and the recognition and correction of common errors in grammar and usage.

Minimum 3 Class Hours

ENGLISH-AS-A-SECOND-LANGUAGE (ESL) COURSES

The following English courses are especially designed for international students, who are enrolled in appropriate English courses after diagnostic testing by the English Department. For programs requiring six credits of English instruction, any combination of 2 English-As-A-Second-Language courses numbered 105-108 fulfills the six credit English requirement, except with regard to programs requiring ENG 150 Technical Writing. In this case, students must comply with the prerequisite for entrance into ENG 150 Technical Writing: ENG 110 Written Expression I or ENG 107 English as a Second Language, Advanced, or permission of the instructor.

ENG 104 English as a Second Language, Review

3 Credits

Intensive review of pre-intermediate levels of the English language for international students. Emphasis on listening, reading, speaking and some aspects of writing. (This course is not acceptable for credits toward a degree).

3 Class Hours

ENG 105 English as a Second Language, Intermediate I

3 Credits

Study of the English language for international students with listening, reading, speaking, writing skills on the intermediate level. Language workshops emphasizing grammar, syntax, vocabulary and comprehension.

3 Class Hours

Prerequisite: ENG 104 English as a Second Language, Review or equivalent

ENG 106 English as a Second Language, Intermediate II

3 Credits

Expanded study of the English language for international students. Emphasis on the development of basic English compositional skills. Continued practice in listening, reading and speaking.

3 Class Hours

Prerequisite: ENG 105 English as a Second Language, Intermediate I or equivalent

ENG 107 English as a Second Language, Advanced I

3 Credits

Advanced study and practice in the composition of ideas and information for international students. Sentence and paragraph development, unity, coherence, style. Writing workshops for intensive practice in the formation of standard and idiomatic

English. Investigation of the nature of language and various aspects of communication to stimulate critical thinking.

3 Class Hours

Prerequisite: ENG 106 English as a Second Language, Intermediate II or equivalent.

ENG 108 English as a Second Language, Advanced II

3 Credits

Further study and practice in critical and evaluative thinking and writing for international students, based upon analysis and exposure to prose as well as major types of imaginative literature. Additional practice and familiarization with research procedures. Writing workshops and individual conferences to guide the international student through writing assignments.

3 Class Hours

Prerequisite: ENG 107 English as a Second Language I

ENG 110 Written Expression I

3 Credits

Study and practice in the composition of ideas and information. Sentence and paragraph development, unity, coherence, style. Nature of language, including investigation of various aspects of communication to stimulate critical thinking.

3 Class Hours

ENG 120 Written Expression II

3 Credits

Further study and practice in critical and evaluative writing based upon analysis of major types of imaginative literature. Familiarization and practice with research procedures.

3 Class Hours

Prerequisite: ENG 110 Written Expression I or permission of instructor.

ENG 150 Technical Writing

3 Credits

Principles and practice of writing to be eventually required of students in technology programs as part of their professional duties. Emphasis on analysis and preparation of reports, articles and technical correspondence.

3 Class Hours

Prerequisite: ENG 107 English as a Second Language, Advanced or ENG 110 Written Expression I or permission of instructor.

ENG 160 Expository Writing

3 Credits

An intensive course in expository, persuasive and critical writing for students who have already mastered the basic skills of written expression. Emphasis on critical reading of professional essayists and articles.

3 Class Hours

Prerequisite: ENG 120 Written Expression II

ENG 163 Introduction to Journalism

3 Credits

Journalistic writing and publication, practices utilizing student publication for workshop and actual publication situations. Designed primarily for editors and staff members of Fulcrum, the campus newspaper.

3 Class Hours

ENG 164 Journalism Seminar and Practicum 3 Credits
 Seminars presented by professional journalists treating timely and important aspects of news writing and newspaper production. Practicum involving hands-on journalistic activities with local and campus newspapers and information agencies.
3 Class Hours
Prerequisite: ENG 163 Introduction to Journalism or ENG 110 Written Expression I plus permission of instructor

ENG 165 Creative Writing—Publication 4 Credits
 Designed to provide students interested in imaginative writing with the opportunity to investigate concepts and to practice techniques implicit in prose, poetry and drama. Class discussion, workshops and personal conferences with the instructor. Writing, evaluating and arranging of material for a campus literary magazine.
3 Class Hours plus Workshop Hours

ENG 166 Creative Writing 3 Credits
 Designed to provide students interested in imaginative writing with the opportunity to investigate concepts and to practice techniques implicit in prose, poetry and drama. Class discussion, workshops and personal conferences with the instructor.
3 Class Hours

ENG 299 Independent Study: English 3 Credits
 An individual student project concerned with advanced work in a specific area of language or literature. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.
Prerequisite: One semester of college level work.

FIRE PROTECTION TECHNOLOGY

***FRS 101 Fire Prevention and Protection 3 Credits**
 Methods, policies and procedures relative to establishing and operating appropriate fire prevention and protection programs. (Not offered in 1983-84 academic year).
3 Class Hours

***FRS 103 Fire Fighting Tactics and Strategy 3 Credits**
 Focus on pre-planning and the development of fire fighting tactics appropriate for a wide variety of hazards. Review of basic information and some local conditions. The case study method is used to develop plans and tactics relating to the student's own departments
3 Class Hours

***FRS 105 Arson Investigation 3 Credits**
 Fire investigations and arson. Responsibilities of the arson investigator, tools of the investigator, photography, electronic devices, laws pertaining to arson, motives and tools of the arsonist, courtroom procedures. A field experience will be included.
3 Class Hours

***FRS 107 Legal Aspects of the Fire Service 3 Credits**
 Laws and regulations as they pertain to the fire service and its personnel. Legal terminology necessary for the interpretation of pertinent laws and decisions. Legal status of the fireman, his rights, duties and liabilities. Responsibilities and powers of the fire service in enforcement of ordinances and codes.
3 Class Hours

***FRS 108 Building Construction for Fire Science 3 Credits**
 Fire fighters are confronted with many unknown factors at the fire ground. Among these is the unknown structural stability of the buildings they must enter. Basic principles of building construction and design with emphasis focused on fire protection concerns. Building materials included.
3 Class Hours

***FRS 200 Hazardous Materials 3 Credits**
 Chemicals and chemical processes most closely involved in fire protection and fire fighting. Use, storage, transportation and disposal of hazardous materials with emphasis on flammable liquids, flammable solids, oxidizing materials, corrosive liquids, compressed gases.
3 Class Hours
Prerequisite: Chemistry

***FRS 201 Fire Service Hydraulics 3 Credits**
 Application of the laws of mathematics and physics to properties of fluid states, force pressure and flow velocities. Emphasis in applying principles of hydraulics to fire-fighting problems. (Not offered in 1983-84 academic year).
3 Class Hours
Prerequisite: MAT 139 Algebra

***FRS 205 Fire Department Administration 3 Credits**
 Organization of fire departments with emphasis on personnel management, distribution of equipment, maintenance of records, communications, data collection and community relations. ISO Grading Schedule.
3 Class Hours

***FRS 210 Fire Safety-Building Design 3 Credits**
 Advanced principles of building design, stability, collapsibility, testing procedures, emergency operations, review of accidents, field trips.
3 Class Hours

FRS 250 Special Topics 1-3 Credits
 Exploration of special topics in Fire Protection Technology. May be repeated since topics will vary from semester to semester.

FRS 299 Independent Study: Fire Service 1-3 Credits
 An individual student project in an area of fire protection or service beyond the scope of regular coursework. Conducted under supervision of coordinator and approved by department chairperson.
Prerequisites: 6 Credits in FRS coursework and 6 Credits in General Education courses

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

FRENCH

FRE 101, 102 Beginning French

4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours

Prerequisite: FRE 101 Beginning French for FRE 102

FRE 201 Intermediate French I

3 Credits

Intensive review of grammar and syntax and oral practice in classroom and audio-lingual laboratory. Reading and discussion of works selected by the instructor.

3 Class Hours

Prerequisite: FRE 102 Beginning French

FRE 202 Intermediate French II

3 Credits

Reading of literary works of recognized authors. Continuation of grammar, syntax and oral practices in classroom and audio-lingual laboratory.

3 Class Hours

Prerequisite: FRE 201 Intermediate French I

FRE 203 Masterpieces of French

Prose and Poetry I

3 Credits

The Middle Ages through the Age of Reason. Readings, lectures and discussions of representative works. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: FRE 202 Intermediate French II

FRE 204 Masterpieces of French

Prose and Poetry II

3 Credits

The Age of Romanticism to contemporary times. Readings, lectures and discussions of representative works. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: FRE 203 Masterpieces of French Prose and Poetry I

FRE 205 The Art of French Conversation

and Composition

3 Credits

To develop the student's perception and appreciation of spoken and written French to prepare him or her for further study of the French language, literature and culture. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: FRE 201 and FRE 202 Intermediate French or equivalent

FRE 299 Independent Study: French

1-3 Credits

An individual student project concerned with advanced work in a specific area of French. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in French

GEOGRAPHY

GEO 110 Physical Geography

3 Credits

Interrelationships of global systems of climate, vegetation, soils, landform development and their significance to humans. The impact of human presence upon natural systems.

3 Class Hours

GERMAN

GER 101, 102 Beginning German

4,4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom. Written homework assignments, supplemented by work in audio-lingual laboratory.

Reading and discussion of graded literary and cultural texts. (Not offered in 1983-84 academic year).

4 Class Hours

Prerequisite: GER 101 Beginning German for GER 102

GER 201 German Conversation and Composition

3 Credits

Emphasis on the four language skills—reading, writing, speaking, listening—especially on speaking and writing. Intensive discussion of style, grammar and the contemporary idiom to enhance the students' ability to express themselves in German. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: GER 102 Beginning German

GER 299 Independent Study: German

1-3 Credits

An individual student project concerned with advanced work in a specific area of German. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in German

HEALTH SERVICES

HSV 101 Cardio-Pulmonary Resuscitation

½ Credit

Performance and demonstration of mastery level learning of the procedures necessary in administering CPR in emergency situations. Leads to American Red Cross or American Heart Association certification. Required for all Health Science students. This course averages out to one hour per week over the semester, but it will probably be given in clusters of 3 hours each in the evening or of 7½ hours each on Saturday to make a total of 15 hours.

15 Laboratory Hours for semester

HSV 110 Contemporary Health Issues (TV Course) 3 Credits

Action-oriented course designed to identify and examine major health issues of our time. Advances in medical science and changes in life style over the past 50 years have altered the health concerns confronting the nation's population. Large numbers of health problems are self-inflicted today, the results of personal and social decisions, ignorance and apathy. Designed to counteract apathy, dispel myths, and provide accurate information upon which to make decisions affecting individual and social health.

30 Half-Hour TV Presentations—To be shown on home TV on WSKG-TV (Channel 46) and/or Cable TV

HISTORY

HIS 100 The Rise of the West 3 Credits

Core course required of all Liberal Arts students and a prerequisite for some other history (HIS) courses. However, even where it is not a prerequisite, students are urged to complete this course before enrolling in any other history course.

Introduction to both the study of history and the evolution of modern society, including its basic ideas, values and institutions, through an examination of Western Civilization. The Age of Transition—the Renaissance, the Reformation, the Scientific Revolution, and the Enlightenment. The Industrial Transformation, appearance of modern constitutional and authoritarian government, major socio-political ideologies—liberalism, socialism, communism, nationalism, imperialism, fascism, totalitarianism. The intellectual crisis of the 20th Century, World Wars I and II.

3 Class Hours

**HIS 115 Modern Global History:
The World in Transition 3 Credits**

Historical development of Western Civilization in the 19th-20th centuries, contrasted with selected non-Western societies. The key theme of the effects of modernity examined in several aspects: the regional nature of geography and demography; the important influences of traditional values and religious beliefs in the areas selected for study; the evolution of capitalism, socialism, communism, and nationalism and how these concepts affected less developed countries; the impact of industrialization, colonialism, technology and science on the peoples of the contemporary world.

3 Class Hours

CIVILIZATION SURVEYS (HIS 130-161)

Liberal Arts students may select any one of the following courses in order to satisfy the remainder of the history requirement.

HIS 130 United States History I 3 Credits

The United States from 1607 to 1898. The colonies, Revolution, Constitution, early national period, Age of Jackson, expansion, Civil War and Reconstruction, the West and the Gilded Age. Survey of political, economic, cultural developments through the 19th Century

3 Class Hours

HIS 131 United States History II 3 Credits

The United States from 1898 to the present. The American Empire, progressive reforms, World War I, the Twenties, Depression, New Deal, World War II and the Cold War, post-war domestic issues.

3 Class Hours

SPECIAL TOPICS IN HISTORY (HIS 170-199)

**HIS 170 The Future as History: A Look at the
21st Century United States 3 Credits**

Does the future have to be a shock? The objective of this course is to prove it does not have to be. Three or four possible courses which the next 100 years may take will be plotted, using knowledge of the economic, political and social developments of the past 100 years of U.S. history and a basic understanding of the present day situation.

3 Class Hours

Prerequisite: HIS 130 United States History I or HIS 131 United States History II or POS 201 Introduction to American Government

HIS 175 Local History 3 Credits

The early history of our local area including the late 18th Century Indian communities and the growth of 19th Century white settlements through development of industries and institutions from the days of the frontiersmen to the era of the railroaders and the factory hands. Historical methods of research. An historical walking tour of Binghamton, investigation of historical records on the premises of cooperative local institutions, and observation of contributions to local history. (Formerly HIS 231.)

3 Class Hours

HIS 180 Utopia: The History of Perfect Societies 3 Credits

Examines the relationship between the "real" and the "ideal" in fictional and actual utopian communities. Comparisons of utopian thought from the classical, medieval and modern periods, from the Garden of Eden to the contemporary commune. Writings of Plato, More, Condorcet, Owen, Saint-Simon, Fourier, Marx, Wells, Huxley, Teilhard de Chardin, Wagar and others.

3 Class Hours

HIS 183 Woman as a Force in History 3 Credits

Women's contributions to the evolution of Western institutions. Exploration of the origins of myths about women, women's roles in modern society, evolution of modern feminism. (Formerly HIS 227.)

3 Class Hours

HIS 185 Hitler and The Nazi Dictatorship 3 Credits

Origins of National Socialism, role of Adolf Hitler, road to Nazi Dictatorship, Nazi political and social revolutions, Hitler's foreign policy and Europe's reaction, World War II and Hitler's "New Order", Nazi system of persecution and genocide, collapse of the 1,000-year Reich, legacy of the Hitler period.

3 Class Hours

HIS 186 Modern American Social History**3 Credits**

Historical currents of social change and reform in the 20th Century from the latter part of the 19th Century through the "Great Society" era to the current "Voluntarism." Reformists themes bearing on health, welfare, labor, women's suffrage, civil rights movement and recent challenges to traditional American family structures and values against the backdrop of hostile and supportive private groups. Creation of public institutions to meet human needs, such as Social Security. Response of the courts to organized reformist pressures. Contemporary trends suggest major changes after a half century of government intervention in social needs.

3 Class Hours**HIS 190 The World Since 1945****3 Credits**

An overview of the changing patterns in world affairs since the end of World War 2 in 1945. For example, emergence of the Third World, the Cold War, responses to scientific/technological change, insurgent movements, attempts at world organization/disarmament, the energy/ecology crisis, the various trouble spots like the Middle East, Panama Canal, Berlin.

3 Class Hours

Prerequisite: HIS 100 The Rise of the West or HIS 131 United States History II

SHORT MODULES (HIS 200-295)

The department offers special short modules of courses that carry one credit each. These deal with concentrated topics in history and are less than one semester in length. For example, modules have been given in "The Great Man in History" series focusing on Adolf Hitler, Fidel Castro, Charles Darwin and Chairman Mao Tse-tung, each covering a 5-week period.

HIS 200 Series—Great Figures in History**1 Credit**

Examining the advantages and disadvantages of using a biographical approach to the study of a particular period in history. In analyzing a "great figure," the student studies the interconnections between the actions of a great person, the role of chance and pressures of major social forces in shaping the course of human history. (Not offered during 1983-84 academic year).

3 Class Hours (For 5 weeks)**HIS 299 Independent Study****1-3 Credits**

An independent student project which is beyond the scope of courses currently offered by the department, directed by a faculty member with approval of the department chairperson. Independent study does not satisfy the Liberal Arts requirement in history, and it may not be taken in lieu of a 100-series course.

Prerequisite: HIS 100 The Rise of the West

HUMAN DEVELOPMENT COURSES

Across the nation students have indicated that they want the opportunity in college to identify, pursue and accomplish personal goals, to develop healthier self-concepts, to develop more effective levels of self-understanding and to become open human beings who can build trusting relationships with others. The student affairs courses can be one means of facilitating humanistic objectives espoused by "new" college students.

SAC 101 The Individual in a Changing Environment**3 Credits**

Individual interaction and reading designed to foster understanding and application of psychological and emotional growth. Basic class material is the individual and group analysis of student's experience within an immediate unstructured setting. Focus on analysis and organization of experience into a personally rewarding conception of growth. Individual self-development projects outside the class.

3 Class Hours**SAC 110 Orientation for International Students****2 Credits**

An orientation course for international students designed to aid in their adjustment as students at BCC. Study skills, academic regulations, the American educational system, individual educational and vocational goals, American customs. Especially intended for students during their initial semester of enrollment in conjunction with American language developmental course offerings such as ENG 104, 105, 106 English as a Second Language and SPK 104 Basic Speaking.

2 Class Hours**SAC 250 Career Exploration****3 Credits**

How to plan, establish, change a career. The process of deciding on a career and implementing career goals, assessment of values, interests and skills plus their relationship to occupations. Analysis of the labor market needs, identification of employers and sources of occupation information, the means of securing employment through proposals, resumes, applications and job interviews. Supportive small group atmosphere. Class activities include discussion, speakers, testing, and individual counseling.

3 Class Hours**SAC 295, 296 Seminar in Human Potential****3,2 Credits**

Human Potential focuses on the person's own resources, strengths, motivators, values and successful and satisfying experiences. Human potential sessions are positive group experiences working on and with the potential and strengths of the feeling concerning one's self and others by utilizing specific procedures.

3, 2 Class Hours**INDUSTRIAL SAFETY AND OCCUPATIONAL HYGIENE****SAF 100 OSHA Codes and Regulations****3 Credits**

In-depth study of the federal Occupational Safety and Health Act of 1970 (OSHA). Other pertinent laws for the protection of the ambient and occupational environments, how they are put together, what is pertinent and how they are used.

3 Class Hours**SAF 101 Accident Investigation and Prevention****3 Credits**

Identification of present and future hazards in facilities, operations and products. Methods of investigation of hazards, reports of injuries, property damage and their causes. Development of accident prevention and loss control methods, procedures and programs.

3 Class Hours

**SAF 102 Design and Evaluation
of a Safety Program**

3 Credits

Development of comprehensive program to protect the employee from potential health hazards in the work environment. Elements of a comprehensive industrial hygiene survey: evaluating existing control mechanisms, review of process or operations, inventory of hazardous materials sources, field study and results, corrective action plan and methods of control.

3 Class Hours

**SAF 105 Material Handling and Storage of
Special and Common Products**

3 Credits

An in-depth study of handling and storage principles and procedures. Personal injuries, improper techniques and hazards of special materials, as well as correct methods and procedures. Visits to industrial sites.

3 Class Hours

SAF 110 Ventilation and Exhaust

3 Credits

Principles of ventilation and ventilation control. Student will visit various industries to study the practical application of systems, engineering problems, methods of control of industrial wastes through the systems.

3 Class Hours

SAF 111 Machine Guarding

3 Credits

Various types of methods and systems in use, advantages and disadvantages of types, design of appropriate machine guarding for work being done. Visits to industrial sites.

3 Class Hours

SAF 120 Introduction to Industrial Hygiene

3 Credits

Fundamentals of industrial hygiene, review of basic mathematics, chemical concepts, associated biochemical concepts, industrial toxicology techniques. Use of guides, codes, regulations and standards for chemical and physical agents. Concepts of a noise program and air sampling.

3 Class Hours

Prerequisite: Chemistry or permission of instructor

SAF 250 Special Topics: Safety

1-3 Credits

An opportunity to explore in depth special topics and problems in Industrial Safety and Health. May be repeated once for credit as the subjects will vary from semester to semester.

SAF 299 Independent Study

1-3 Credits

An individual student project beyond the scope of regular coursework. Conducted under supervision of coordinator and approved by department chairperson.

Prerequisites: 6 Credits in Industrial Safety and Occupational Hygiene courses

INTERIOR DESIGN

**INT 101 History of Architecture—
Exterior and Interior**

3 Credits

Survey of exterior and interior architectural styles from Ancient Egyptian through 20th Century

3 Class Hours

INT 110 Interior Design I

4 Credits

Projects in residential interior design including color coordination, floor plan, space utilization. Study of currently available resources.

2 Class Hours, 4 Laboratory Hours

Prerequisite: ART 105 Introduction to Design

Recommended: CIV 117 Architectural Drafting and INT 101 History of Architecture—Interior and Exterior

INT 111 Interior Design II

4 Credits

Two major projects, one commercial and one residential, stressing space utilization. Contrasting building types must be selected for the projects, one contemporary form and one traditional.

2 Class Hours, 4 Laboratory Hours

Prerequisite: INT 110 Interior Design I

**INT 120 Construction and Workroom
Techniques I**

2 Credits

Study of processes, manufacture and installation of interior design products.

2 Class Hours

**INT 121 Specification Writing
for Interior Designers**

2 Credits

Techniques used in writing specifications for interior design projects.

2 Class Hours, 1 Laboratory Hour

INT 130 Rendering

2 Credits

Perspectives of room interiors: treats the problems of representation related to light, texture and color.

4 Laboratory Hours

INT 140 Fabric Analysis

2 Credits

Types of fabrics used in interior design including methods of manufacturing, fiber and construction analysis, historical origins.

2 Class Hours

ITALIAN

ITA 101, 102 Beginning Italian

4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours

Prerequisite: ITA 101 Beginning Italian for ITA 102

ITA 201 Intermediate Italian I

3 Credits

Comprehensive review of grammar and structure of the language. Intensive reading of literary works as a basis for topics of conversation in Italian in the classroom. Emphasis on aural comprehension and oral practice in classroom and audio-lingual laboratory.

3 Class Hours

Prerequisite: ITA 102 Beginning Italian

ITA 202 Intermediate Italian II**3 Credits**

Intensive reading of literary works of recognized authors as a basis for topics of conversation in Italian in the classroom. Practice in audio-lingual laboratory.

3 Class Hours**Prerequisite:** ITA 201 Intermediate Italian I**ITA 299 Independent Study: Italian****1-3 Credits**

An individualized student project concerned with advanced work in a specific area of Italian. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in Italian**LITERATURE**

The Department of English recommends that students complete a composition program before taking literature courses.

LIT 210 Studies in United States Literature I**3 Credits**

History and development of United States literature from colonial period to late 19th Century. Emphasis on several major writers of the period.

3 Class Hours**LIT 211 Studies in United States Literature II****3 Credits**

History and development of United States literature from late 19th Century to the present. Emphasis on several major writers of the period.

3 Class Hours**LIT 214 Studies in British Literature I****3 Credits**

History and development of British literature from the Middle Ages to the 18th Century. Selections of literary merit from prose, drama, poetry.

3 Class Hours**LIT 215 Studies in British Literature II****3 Credits**

History and development of British literature from the beginning of the 18th Century to the middle of the 20th.

3 Class Hours**LIT 220 The World of the Short Story****3 Credits**

An examination of the development of American, British and Continental short stories. Emphasis on theme and structure.

3 Class Hours**LIT 230 American Drama****3 Credits**

Studies in dramatic theories, techniques and thematic problems of the American drama. (Students taking this course may also be interested in THR 101 Fine Arts: Introduction to Theatre and THR 111 Acting.)

3 Class Hours**LIT 233 World Drama****3 Credits**

Studies in dramatic theories, techniques and thematic relationships of the world drama. (Students taking this course may also be interested in THR 101 Fine Arts: Introduction to Theatre and THR 111 Acting.)

3 Class Hours**LIT 235 Tragic and Comic Vision of Shakespeare****3 Credits**

Shakespeare as both dramatist and poet. Emphasis on selected comedies, histories, tragedies.

3 Class Hours**LIT 240 The Poetic Experience: Sight and Sound****3 Credits**

An exploration of the different modes and moods of poetic expression. A thematic and structural approach to poetry as a total experience.

3 Class Hours**LIT 250 Portraits of Women: Search for Understanding****3 Credits**

An in-depth examination of what it means to be a woman as presented by representative literary artists, both women and men, in critically acclaimed pieces of literature. Emphasis on 19th and 20th Century material.

3 Class Hours**LIT 253 Psychological Investigation in Literature****3 Credits**

The application of Jungian, Freudian and other psychological theories and insights to selected short stories, novels, and poems to promote more penetrating appreciation of characters' motivations and actions and the literary work in general.

3 Class Hours**LIT 255 Modern Existential Literature****3 Credits**

An investigation of the themes of alienation and the absurd in selected prose and poetry to shed light on man's current existential crisis.

3 Class Hours**LIT 257 Heritage of Modern Literature****3 Credits**

An attempt to define modern literature as an embodiment and development of antique themes and traditions through the comparative study of the epic, the novel and related genre.

3 Class Hours**LIT 260 Detective Fiction****3 Credits**

A critical study of one of the most popular literary forms of our time designed for armchair detectives. Starting with Poe, Conan Doyle (Sherlock Holmes) and other classics in the field, the course traces the development of the detective story from its puzzle-solving beginnings to the modern psychological novel of crime and detection.

3 Class Hours**LIT 263 Children's Literature****3 Credits**

Children's literature with introduction to the variety of books available today and development of standards for evaluating them. Prime concern is to help the student use literature with children creatively, recognizing the importance of language, arts, communication and listening skills in cognitive development.

3 Class Hours**LIT 265 Biblical Literature****3 Credits**

An acquisition of the skills necessary to study the Bible. Emphasis on the Biblical narrative and its relationship to Western culture through reading and analysis.

3 Class Hours

LIT 268 Fantasy and the Anti-Story**3 Credits**

An overview of two popular literary types: fantasy and anti-story. History of these types, with focus mainly on 20th Century development as the types have matured. Students read non-realistic fiction
3 Class Hours

LIT 269 Prison Literature**3 Credits**

An examination of the prison experience through a variety of readings in prose and poetry focusing on man's continuing struggle to understand this social phenomenon.
3 Class Hours

MARKETING COURSES

are under the Business heading starting on page 70.

MATHEMATICS**MAT 003 Basic Mathematics Review****3 Credits***

Basic Mathematics Review is designed to give the student proficiency in elementary mathematics and provide a firm foundation for credit courses. It consists of three units allowing each department to select the units needed as prerequisites for its courses or programs.
3 Class Hours

A. Arithmetic and Introduction to Algebra

Arithmetic of whole numbers, fractions and decimals. Percent, measurement, metric units, ratio and proportion. Language of algebra, arithmetic of signed numbers, solving simple equations. Problem solving.

B. Elementary Algebra

Addition, subtraction, multiplication, division and simplification of algebraic expressions. Graphing. Solving linear equations and inequalities in two variables.
Prerequisite: Basic Mathematics Review A

C. Geometry and Introduction to Trigonometry

Properties and measurements of angles. Similar and congruent triangles, polygons and circles. Perimeter, area and volume measurements. Use of trigonometric ratios to solve right triangle problems.
Prerequisite: Basic Mathematics Review A

D. Metric Conversions and Dosage Computation

Common fractions and decimal fractions. Percentages, ratios and proportions. Metric computations. Apothecary systems. Apothecary, metric and household conversions. Calculation of dosages. Designed to meet the mathematics proficiency required for clinical nursing courses.
Prerequisite: Basic Mathematics Review B

Basic Math Review is a self-paced course. Students use self-study texts and audio-visual aids with instructors available for individual help.

A complete sequence of Basic Math Review would begin with the first section of Arithmetic and Introduction to Algebra and end with the last section of Geometry and Introduction to Trigonometry. But few students study the entire sequence. The entry point in the sequence is determined by a placement test. The exit point is usually determined by the student's program requirements. All units are available in every scheduled section

*Credit not applicable toward A.A., A.S., or A.A.S. degrees.

MAT 106 Basic Technical Mathematics I**3 Credits****Credit applicable to AOS degree only.**

Basic properties of numbers involving addition, subtraction, multiplication and division. Percentage, ratio and proportion, interpretation of graphs, use of simple algebraic quantities and equations. Metric systems and conversions to the English system. Many applications taken from drafting and the machine shop.

3 Class Hours**Placement by advisor****MAT 107 Basic Technical Mathematics II****3 Credits****Credit applicable to AOS degree only**

Linear equations, right angle and oblique triangle trigonometry, powers, roots, and exponents. Formulas, Pythagorean Theorem, vectors, quadratic equations. Many applications taken from drafting and the machine shop.

3 Class Hours**Prerequisite: MAT 106 Basic Technical Mathematics I****MAT 110 Consumer Mathematics****3 Credits**

Experience in applying mathematics to consumer matters. Learning activities include using bank accounts, preparing budgets, using credit, buying a car and house, purchasing insurance, completing income tax forms.

3 Class Hours**Prerequisite: MAT 003A Basic Mathematics Review or equivalent****MAT 113 Mathematics: A Liberal Art****3 Credits**

Introduction to the variety and structural beauty of mathematics. Inductive and deductive reasoning, games and number theory, large numbers, exponents, mathematical curves in nature and science, elementary probability, statistics, statistical graphs, misleading uses of statistics, moebius strips. For Liberal Arts students. Recommended for Fine Arts or Humanities majors and for Science majors.

3 Class Hours**Prerequisite: MAT 003 Basic Mathematics Review A or equivalent****MAT 117 Elementary Finite Mathematics with Algebra****4 Credits**

Sets, probability, matrix algebra, graphing, inequalities, linear programming.

4 Class Hours**Prerequisite: MAT 003 Basic Mathematics Review A or equivalent****MAT 119 Modern Basic Mathematics I****3 Credits**

Algebra of propositions. Algebra of sets. Systems of numeration other than base ten. Properties of the operations of addition and multiplication for the sets of whole numbers, integers and rational numbers. Introduction to number theory. For Liberal Arts Students—recommended for elementary education majors. Formerly MAT 131 Modern Basic Mathematics I.

3 Class Hours**Prerequisite: MAT 003 Basic Mathematics Review B or equivalent****MAT 120 Modern Basic Mathematics II****3 Credits**

Real number systems, other mathematical systems. Informal geometry, congruence, measurement of areas and volumes, basic constructions. Coordinate geometry, lines, circles, equations. Inequalities and linear programming. Simple and conditional probability. Introduction to statistics.

3 Class Hours**Prerequisite: MAT 119 Modern Basic Mathematics I or MAT 003C Basic Mathematics Review or equivalent**

MAT 121 Finite Mathematics**3 Credits**

Sets and logic, permutations, combinations and probability, vectors and matrices, inequalities and linear programming. The computer language BASIC is used.

3 Class Hours

Prerequisite: MAT 003 Basic Mathematics Review B or equivalent and CST 110 Introduction to Data Processing. If student has not had CST 110, then CST 100 BASIC may be substituted as a prerequisite or taken concurrently.

MAT 124 Statistics**3 Credits**

Descriptive statistics, organization and presentation of data, measures of central tendency. Variance, standard deviation, binomial distribution, statistical inference. Random sampling, hypothesis testing, confidence intervals, normal distribution, analysis of variance. Chi-square distribution, students t-distribution, correlation and regression. Formerly MAT 114 Statistics.

3 Class Hours

Prerequisite: MAT 003 Basic Mathematics Review B or equivalent

MAT 139 Algebra**4 Credits**

Real and complex numbers, algebraic operations, functions and graphs, exponents and logarithms, linear and quadratic equations, systems of linear equations, linear inequalities, binomial theorem.

4 Class Hours

Prerequisite: Basic Mathematics Review B or equivalent

MAT 140 Trigonometry**4 Credits**

Trigonometric functions and their graphs, solution of triangles, trigonometric identities and equations, inverse trigonometric functions, position vectors, polar representation of complex numbers. DeMoivre's theorem.

4 Class Hours

Prerequisite: MAT 139 Algebra or equivalent

MAT 141 Algebra and Trigonometry**4 Credits**

A review of algebra and trigonometry emphasizing computational skills and technical applications. Algebraic operations, functions and graphs, exponents and logarithms, linear equations, system of linear equations and determinants. Trigonometry and the solution of triangles, trigonometric functions and their graphs, quadratic equations, vectors, complex numbers. For engineering technology students.

4 Class Hours

Placement by technical program advisor

MAT 142 Applied Calculus I**4 Credits**

Basic analytic geometry, distance, equations of lines. Limits, continuity and the derivative. Differentiation of polynomials, maxima and minima. Differentials and approximation, applications in kinematics and circuits. The definite integral and applications to finding area, center of gravity, volume of revolution, work done. Approximate integration, differentiating products and quotients, implicit differentiation and related rates, differentiation and integration of logarithmic, exponential, trigonometric and inverse trigonometric functions.

4 Class Hours

Prerequisite: MAT 141 Algebra and Trigonometry or MAT 140 Trigonometry

MAT 146 Introduction to Calculus**3 Credits**

Analytic geometry of line, circle and parabola. Functions and their graphs. Limits and continuity, differentiation—rules and applications, integration—techniques and applications. Exponential and logarithmic functions and applications. Recommended for social science, health science and business students. Not for math majors or science majors in the A.S. degree program. (Formerly MAT 122).

3 Class Hours

Prerequisite: MAT 139 Algebra or equivalent

MAT 153 Discrete Mathematics I**4 Credits**

Topics from mathematics needed to understand the operation and use of the digital computer. Algebra of sets, product sets. Relations, equivalence relations, partitions, partial ordering. Functions: one-to-one, onto, inverse. Vectors, matrices, matrix algebra, determinants. Systems of linear equations, linear programming, difference equations. Fundamental principles of counting, binomial coefficients, permutations, combinations, ordered partitions, tree diagrams.

4 Class Hours

Prerequisites: CST 115 Problem Solving with Pascal and MAT 139 Algebra

MAT 154 Discrete Mathematics II**4 Credits**

Topics from mathematics needed to understand the operation and use of the digital computer. A continuation of MAT 153 Discrete Mathematics I. Graph theory, connectivity, matrices and graphs, trees, rooted trees, directed graphs. Finite state machines, strings. Algebraic systems and formal languages, posets and lattices, propositional calculus, Boolean algebra.

4 Class Hours

Prerequisites: MAT 153 Discrete Mathematics I

MAT 161 Pre-Calculus Mathematics**4 Credits**

Sets, the real number system, inequalities, graphing and the Cartesian Coordinate System, functions and their properties, inverse functions, exponential and logarithmic functions, trigonometric functions, systems of equations, complex numbers and theory of equations.

4 Class Hours

Prerequisite: MAT 139 Algebra or equivalent

MAT 163 Calculus with Analytic Geometry I**4 Credits**

The Cartesian Coordinate System, distance formula, equations of lines, functions and limits. Differentiation of algebraic functions and applications, including rectilinear motion, related rates, maxima and minima. Techniques of graphing. Summation, integration, and the Fundamental Theorem of Integral Calculus. Applications of the definite integral, including area, volume, arc length, surface area, work and liquid pressure.

4 Class Hours

Prerequisite: MAT 161 Pre-Calculus Mathematics or MAT 140 Trigonometry or MAT 141 Algebra and Trigonometry

MAT 164 Calculus with Analytic Geometry II 4 Credits

Differentiation and integration of logarithmic, exponential, hyperbolic functions, inverse trigonometric, inverse hyperbolic functions and parametric expressions. Techniques of integration including integration by parts, partial fractions and trigonometric substitution. Improper integrals, indeterminate forms and L'Hopitals rule. Infinite series and convergence testing. The Polar Coordinate System and its applications. Vectors in two and three dimensions. Unit tangents and normals. Lines in three space. Dot and cross product.

4 Class Hours

Prerequisite: MAT 163 Calculus with Analytic Geometry I

MAT 171 Engineering Calculus with Analytic Geometry I 4 Credits

Equations of a line, limits, continuity, derivatives of algebraic functions. Applications to curve sketching, related rates, maxima and minima, antidifferentiation. The definite integral and the Fundamental Theorem of Calculus. Applications of the definite integral including area, volume, moments and work.

4 Class Hours

Placement by advisor

MAT 172 Engineering Calculus with Analytic Geometry II 4 Credits

Differentiation of trigonometric, inverse trigonometric, exponential and logarithmic functions. Integration of trigonometric and exponential functions, techniques of integration. Conic sections, hyperbolic functions, polar coordinates, plane and space vectors, scalar and vector products.

4 Class Hours

Prerequisite: MAT 171 Engineering Calculus with Analytic Geometry I

MAT 252 Mathematical Modeling with the Computer 4 Credits

Computer techniques for the modeling and solutions of problems in numerical analysis. Error analysis, roots of equations, linear and non-linear systems of equations, calculus of finite differences, numerical integration, curve fitting, numerical solution of ordinary differential equations. The computer language Pascal is used.

4 Class Hours

Prerequisites: CST 115 Problem Solving with Pascal and either MAT 164 Calculus with Analytic Geometry II or MAT 172 Engineering Calculus with Analytic Geometry II

MAT 263 Calculus with Analytic Geometry III 4 Credits

Sequences, series, power series and radius of convergence. Conic sections and rotation of axes. Three dimensional analytic geometry and vectors including equations of lines and planes, scalar and vector products, cylindrical and spherical coordinates. Partial differentiation, directional derivatives, gradients, maxima and minima. Volume and other applications done by multiple integrals. Line integrals and Green's theorem.

4 Class Hours

Prerequisite: MAT 164 Calculus with Analytic Geometry II

MAT 264 Linear Algebra 4 Credits

Linear equations and matrices, real vector spaces, the algebra of linear transformations and matrices, determinants, eigenvalues and eigenvectors.

4 Class Hours

Prerequisite: MAT 164 Calculus with Analytic Geometry II or MAT 172 Engineering Calculus with Analytic Geometry II

MAT 266 Introduction to Higher Mathematics 3 Credits

Exposure to basic mathematical methods and concepts. Sets, sequences, mappings, convergence. Preparation for analysis, topology and modern algebra. Recommended for Mathematics majors, Computer Science students and Engineering Science students, as advised.

3 Class Hours

Prerequisite or corequisite: MAT 263 Calculus with Analytic Geometry III or MAT 271 Engineering Calculus with Analytic Geometry III or permission of Instructor

MAT 271 Engineering Calculus with Analytic Geometry III 4 Credits

Partial differentiation, gradient, maxima and minima, double and triple integrals applied to areas and volumes. Cylindrical and spherical coordinates, line and surface integrals, infinite series, Taylor's Theorem, complex numbers and functions.

4 Class Hours

Prerequisite: MAT 172 Engineering Calculus with Analytic Geometry II

MAT 272 Differential Equations with Linear Algebra 4 Credits

First order differential equations. Matrices, determinants and solutions of systems of linear equations. Vector spaces, Wronskians, linear transformations and differential operations. Characteristic values and vectors, real symmetric matrices, functions of matrices. Homogeneous and nonhomogeneous linear differential equations with constant coefficients, undetermined coefficients and variations of parameters. Matrix formulation of linear systems of differential equations and solution by characteristic values, the exponential matrix function and nonhomogeneous linear systems.

4 Class Hours

Prerequisite: MAT 271 Engineering Calculus with Analytic Geometry III or MAT 263 Calculus with Analytic Geometry III

MAT 299 Independent Study 1-4 Credits

The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.

Prerequisite: Department Chairperson Permission

MECHANICAL ENGINEERING TECHNOLOGY

MET 113 Engineering Drawing I 2 Credits

Basic course that includes lettering, line and instrument exercises, orthographic projection, sketching, dimensioning, auxiliary views, sections, threads, fasteners, fits and tolerances.

1 Class Hour, 2 Laboratory Hours

MET 114 Engineering Drawing II 2 Credits

Fits and tolerances, developments and intersections, pictorial drawings and descriptive geometry.

1 Class Hour, 2 Laboratory Hours

Prerequisite: MET 113 Engineering Drawing I

MET 115 Graphics

Basic course that includes lettering, orthographic projecting, dimensioning, sections, auxiliary views by instrument and free hand. True length, true size, relationships between lines and planes. For Engineering Science students.

1 Class Hour, 2 Laboratory Hours

MET 121 Manufacturing Processes I

A basic study of manufacturing materials and processes, such as casting metal, production of ferrous and non-ferrous metals and shape changing processes of hot and cold working techniques. Oxyacetylene, arc, resistance welding. Machine tool operation, instrumentation and measurement.

2 Class Hours, 2 Laboratory Hours

MET 122 Manufacturing Processes II

Abrasives and grinding, indexing, gearing, special machining processes such as numerical control and electrical discharge machining. Advanced elements of machine tool operation including the use of grinding machines, turret lathe, honing, lapping.

1 Class Hour, 3 Laboratory Hours

Prerequisite: MET 121 Manufacturing Processes I

MET 125 Programming Numerical Control Machine Tools

Rectangular coordinate system, point to point and continuous path programming, reading and preparation of perforated tape and actual programming of certain numerical control equipment. Computer assisted programming and the relationship of group technology will be discussed.

2 Class Hours

Prerequisites: MAT 107 Basic Technical Mathematics or equivalent and MET 122 Manufacturing Processes II or instructor's approval.

MET 129 Survey of Engineering Laboratories

Engineering materials, physical tests and manufacturing processes encountered in mechanical technology laboratories. Lectures, demonstrations and participation in manufacturing processes, casting, welding and forging, metallurgy, strength of materials, fluids and thermodynamics, technical sketching and blueprint reading, scientific calculators. For Secretarial Science students.

2 Class Hours, 2 Laboratory Hours

MET 132 Applied Mechanics

STATICS: Free body diagram, trusses, friction, centroids, moments of inertia.

DYNAMICS: Motion of particles and bodies without consideration of the forces required to produce or maintain motion (kinematics), unbalanced forces and the motion they produce (kinetics), work and energy, impulse and momentum.

4 Class Hours

Prerequisites: PHY 141 Physics and MAT 141 Algebra and Trigonometry or equivalent or department chairperson approval

MET 152 Engineering Materials

Physical and chemical properties of engineering materials. Mechanical tests, structure, phases, relationship and reactions within metallic and non-metallic structure.

4 Class Hours

2 Credits

3 Credits

2 Credits

2 Credits

3 Credits

4 Credits

4 Credits

MET 223 Manufacturing Processes III

Further experience with indexing, spiral work, cams, cylindrical grinding.

2 Class Hours

Prerequisite: MET 122 Manufacturing Processes II

2 Credits

MET 235 Strength of Materials

Normal and shear stress and strain, elastic and plastic deformation, torsion, stress in thin-walled cylinders, joints, shear force and bending moment in beams, beam stresses, beam deflection, multi-directional plane stress.

2 Class Hours, 3 Laboratory Hours

Prerequisite: MET 132 Applied Mechanics

3 Credits

MET 238 Mechanical Design

An analysis of machine motion and the design of machine elements. Analysis of motion of linkages and mechanisms for displacement, velocity and acceleration relationships. Design and analysis of weldments, fasteners, springs, power screws, couplings, shafts, clutches, gears and bearings.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MET 235 Strength of Materials

4 Credits

MET 241 Fluid Mechanics

and Thermodynamics

FLUID MECHANICS: Fluid statics and dynamics, steady flow energy equations, laminar and turbulent flow viscosity and fluid friction, flow measurement.

THERMODYNAMICS: Perfect gas law, specific heats, property and energy relationships in non-flow and steady flow processes for gases, internal combustion engine cycles, nozzles and diffusers, gas turbines.

2 Class Hours, 3 Laboratory Hours

Prerequisite: MET 132 Applied Mechanics

3 Credits

MET 244 Thermodynamics

Property and energy relationships in steady flow processes for vapors, power and refrigeration cycles, nozzles and diffusers. Heat transfer in plane and circular geometry, film coefficients, heat exchangers.

2 Class Hours, 3 Laboratory Hours

Prerequisite: MET 241 Fluid Mechanics and Thermodynamics

3 Credits

MET 246 Refrigeration and Air Conditioning

Energy transfer systems and controls used for cooling an environment below the temperature of its surroundings. Air and humidity calculations, heat transfer and transmission coefficients, heating loads, distribution systems, refrigeration systems, cooling load and air conditioning calculations, controls and control systems.

3 Class Hours

Prerequisite: MET 241 Fluid Mechanics and Thermodynamics

3 Credits

***MET 247 Air Conditioning and Refrigeration**

Energy transfer systems and controls used for cooling an environment below the temperature of its surroundings. Air and humidity calculations, heat transfer and transmission coefficients, heating loads. Thermodynamics and fluid flow concepts essential for satisfactory treatment of the above areas of study.

3 Class Hours

Prerequisite: PHY 141 Physics

3 Credits

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

MET 248 Fluid Power **3 Credits**
 Static and dynamic fluid force systems used for both actuation and control of mechanical devices. Applications of frequently used fluid power components and circuits.
3 Class Hours
Prerequisite: MET 241 Fluid Mechanics and Thermodynamics

***MET 249 Fluid Power** **3 Credits**
 Fluid statics and fluid dynamics preceding a treatment of static and dynamic force systems used for both actuation and control of mechanical devices. Applications of frequently used fluid power components and circuits.
3 Class Hours
Prerequisite: MET 132 Applied Mechanics

MET 252 Engineering Materials and Industrial Processes **4 Credits**
 Properties, applications and processing of engineering materials including metallic, non-metallic, and composites
3 Class Hours, 3 Laboratory Hours
Prerequisites: MET 121 Manufacturing Processes I and MET 235 Strength of Materials

***MET 253 Engineering Materials and Industrial Processes** **3 Credits**
 Properties, applications and processing of engineering materials including metallic, non-metallic and composite materials.
2 Class Hours, 2 Laboratory Hours
Prerequisite: MET 121 Manufacturing Processes I and MET 235 Strength of Materials

***MET 255 Introduction to Plastics Engineering** **3 Credits**
 Basic concepts of chemical structure and the physical properties of thermoplastic and thermoset materials including additives in plastics, heat transfer and flow behavior of plastic melt testing and property measurement, processing techniques with emphasis on extrusion and injection molding, defect analysis and troubleshooting, process control and instrumentation, material selection and application, commercial plastics, trade names, suppliers and prices.
3 Class Hours

MET 261 Engineering Statistics and Quality Control **3 Credits**
 Measures of central tendency, variance, standard deviation, binomial distribution, normal distribution, statistical inference, hypothesis testing, confidence intervals, chi-square and student's t-distribution, correlation and regression, similar elements of statistics as they pertain to engineering problems. Control chart analysis.
2 Class Hours, 2 Laboratory Hours
Prerequisite: MAT 141 Algebra and Trigonometry or MAT 139 Algebra

MET 272 Automotive Systems **3 Credits**
 Functional elements of the automobile. The fuel system, ignition system, the engine cycle, pollution control system, the chassis and basic elements of engine tuneup.
2 Class Hours, 2 Laboratory Hours

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

***MET 280 Management Decisions** **2 Credits**
 Objective criteria and evaluations in making management decisions. Currently accepted procedures to conceive management models and systems.
2 Class Hours

***MET 285 Time, Motion and Wage Study** **2 Credits**
 Analysis of time spent and methods used for industrial tasks. Relation to wage structure on individual and plant-wide basis.
2 Class Hours
Prerequisite: MAT 139 Algebra

***MET 286 Production Control** **2 Credits**
 Planning, scheduling and routing of goods through a plant from raw materials to finished products. Production control principles, the control of manufacturing processes.
2 Class Hours
Prerequisite: MAT 139 Algebra

MET 287 Plant Layout and Materials Handling **2 Credits**
 Plant arrangement as it influences industrial operations. Assembling data, coordinating operations, developing operational layouts, evaluative arrangements. Materials handling requirements, planning and evaluation.
2 Class Hours
Prerequisite: MAT 139 Algebra

MET 295 Seminar **1-3 Credits**
 An opportunity for the interested student to become involved with the process of research, formal paper preparation, formal delivery and defense of ideas presented. Also a critical evaluation of ideas set forth by others.
Prerequisite: As established by the Department Chairperson

MET 299 Independent Study **2-3 Credits**
 The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.
Prerequisite: Approval of Department Chairperson

MEDICAL LABORATORY TECHNOLOGY

MLT 111 Introduction to Clinical Laboratory Methods and Practices **2 Credits**
 To acquaint the medical laboratory student with the history and scope of clinical laboratory medicine. Responsibility and professional ethics to self, employer, physician and patient. Field trips to clinical laboratory facilities. Basic clinical laboratory procedures and methodologies for urinalysis performed in laboratory sessions.
1 Class Hour, 2 Laboratory Hours

MLT 112 Hematology **3 Credits**
 Anatomy and pathophysiology of the blood and hemopoietic tissue. Techniques and procedures for studying and evaluating blood in health and disease. Laboratory work includes specialized hematological techniques and procedures.
2 Class Hours, 4 Laboratory Hours
Prerequisite: MLT 111 Introduction to Clinical Laboratory Methods and Practices or permission of instructor

MLT 211 Clinical Chemistry I**4 Credits**

Principles and methods of analytical clinical chemistry applied to the physiochemical measurements of body function in health and disease. Emphasis on those chemical tests related to excretion, digestion, metabolism and protein synthesis. Laboratory work includes the related chemical tests and specialized analytical instrumentation.

2 Class Hours, 6 Laboratory Hours

Prerequisite: One year general chemistry and one year biology or permission of instructor

MLT 212 Clinical Chemistry II**4 Credits**

A continuation of MLT 211 Clinical Chemistry I. Emphasis on those chemical tests related to liver function, blood gases, pH and electrolyte balance, enzyme, hormones in health and disease. The laboratory work includes the specific related chemical test and specialized analytical instrumentation.

2 Class Hours, 6 Laboratory Hours

Prerequisite: MLT 211 Clinical Chemistry I or permission of instructor

MLT 232 Immunology and Immunohematology**4 Credits**

Introduction to immunological processes, serological procedures, blood banking theory and techniques. Laboratory sessions are designed to provide experience in basic serology and blood banking.

3 Class Hours, 2 Laboratory Hours

Prerequisite: MLT 112 Hematology or permission of instructor

MLT 251 Diagnostic Microbiology**4 Credits**

A survey of the medically important microbes, emphasizing the diseases they cause, and the diagnostic techniques used in the clinical laboratory.

3 Class Hours, 4 Laboratory Hours

Prerequisite: BIO 150 or permission of instructor

MLT 299 Independent Study**1-4 Credits**

Course content covering advanced work in Medical Laboratory Technology on which the instructor and student agree. The material is beyond the scope of an ordinary course and it must be approved by the department chairperson. Conducted under the direction of a faculty member.

Prerequisite: Department Approval

MEDICAL ASSISTANT

MDA 102 Medical Assisting Science**2 Credits**

Introduction to the profession of medical assisting. Qualifications and duties, professional affiliation, history of medicine, ethics and professionalism, the role of the Medical Assistant. Interpersonal relations.

2 Class Hours**MDA 112 Medical Correspondence and Communications****2 Credits**

Development of correspondence and communication skills. Fundamentals of machine-dictated and written medical reports and correspondence. Patient related communications, such as reception and telephone techniques, message taking and patient information skills. For Medical Assistant Students.

4 Laboratory Hours

Prerequisite: MRT 105 Medical Terminology I

MDA 114 Standard First Aid and Personal Safety; Management of Emergencies**1 Credit**

The causes, care and prevention of accidental/emergency life-saving situations. Mastery level of learning for the proficiency of basic skills. Certification by American Red Cross. Recognizing, managing and aiding the physician in medical emergencies and maintaining emergency supplies.

2 Laboratory Hours**MDA 115 Medical Assisting Procedures****4 Credits**

Clinical procedures of medical assisting in the physician's office. Use and management of diagnostic instruments and equipment. Related patient care, professional ethics and nomenclature. For Medical Assistant students.

3 Class Hours, 2 Laboratory Hours

Prerequisite: MRT 105 Medical Terminology or consent of instructor

MDA 201 Medical Assisting Procedures**4 Credits**

Laboratory introduction to microscopic analysis of blood and urine. Also simple blood chemistry tests in medical office. Study of formation of blood cells and urine. For Medical Assistant students.

2 Class Hours, 4 Laboratory Hours

Prerequisite: BIO 132 Human Biology II

MDA 206 Medical Office Management**4 Credits**

Medical office administrative procedures, such as accounting principles and practices, patient health records, insurance forms, banking and postal services, payroll records, patient fees and ledger cards, office machines. Mechanics of applicable medical correspondence including letters, manuscripts. Appointment scheduling, supplies and inventory. Emphasis on practical application of techniques. For Medical Assistant Students.

3 Class Hours, 3 Laboratory Hours

Prerequisites: MDA 102 Medical Assisting Science and MDA 106 Medical Correspondence and Communications

MDA 208 Medical Law, Ethics and Economics**3 Credits**

Emphasizes the medical ethics which set the standards of conduct for physicians, as well as guidelines for medical assistants. Requirements to practice medicine, legal liabilities of the profession, and the importance of medicolegal consent forms. Various types of medical practices, fee determination, health insurance programs, and systems of health care delivery.

3 Class Hours**MDA 210 Pharmacology****2 Credits**

A practical course relevant to medical curriculums. Emphasizes knowledge of prescriptions and prescription writing. Basic principles of mathematics of pharmacy. Drugs governed by U.S.P. standards which are in common use and their generic-pharmaceutical relationship. Drug grouping and action relevant to human physiology. For Medical Assistant and Medical Record Technology students.

2 Class Hours

Prerequisite: BIO 132 Human Biology II

MDA 211 Medical Assisting Procedures**4 Credits**

Advanced technical procedures in medical assisting specifically oriented to the various medical specialties. Techniques of electrocardiography, audiometry and physical therapy. Field trips and practical experiences give additional background outside of the classroom. For Medical Assistant students. **(It is strongly recommended that this course be taken the semester prior to the MDA 245 Directed Practice).**

2 Class Hours, 4 Laboratory Hours**Prerequisite:** BIO 132 Human Biology II and MDA 115 Medical Assisting Procedures**MDA 245 Directed Practice****5 Credits**

Directed practical experience in the physician's offices, medical centers, school health departments, rehabilitation clinics, and other health care institutions, weekly seminars. For Medical Assistant students.

1 Class Hour, 16 Laboratory Hours**Prerequisites:** MDA 206 Medical Office Management and MDA 211 Medical Assisting Procedures.**MDA 201 Medical Assisting Procedures and MDA 210 Pharmacology must be taken previously or concurrently****MEDICAL RECORD TECHNOLOGY****MRT 101 Medical Record Science****3 Credits**

Introduction to the history of medicine and the historical development of the health care field, with emphasis on the organizational structure of health institutions. Functions of a medical record department and overview of the professional association. Definition of, standards for, and development of a medical record as to content, format, evaluation and completion. A comprehensive review of the organization of the medical staff.

2 Class Hours, 2 Laboratory Hours**MRT 105 Medical Terminology I****2 Credits**

Medical terminology as correlated with anatomical systems. Suffixes, prefixes, root words and use of the medical dictionaries. For Medical Assistant and Medical Record Technology students.

2 Class Hours**MRT 107 Medical Transcription****2 Credits**

Designed to introduce the student to the knowledge and skills required for medical machine transcription in a health care facility. A practical experience in transcribing including proper format and a variety of medical reports.

4 Laboratory Hours**Prerequisite:** MRT 105 Medical Terminology I**MRT 110 Medical Record Science****4 Credits**

A study and application of the Problem Oriented Medical Record System. Purpose of classifying diseases and operations, difference between and historical development of nomenclature and classification systems. Value and use of indexes and registers. Numbering and filing systems and methods. Storage and retrieval systems

2 Class Hours, 4 Laboratory Hours**Prerequisite:** MRT 101 Medical Record Science**MRT 115 Medical Terminology II****2 Credits**

A continuation of MRT 105 Medical Terminology I. Emphasis on terminology associated with the integumentary, musculoskeletal, nervous, special senses, cardiovascular, digestive, respiratory, genito-urinary and endocrine systems.

2 Class Hours**Prerequisite:** MRT 105 Medical Terminology I**MRT 144 Directed Practice****4 Credits**

Directed summer practical experience in the hospital medical record department. Development of insight and skills into the basic medical record procedures. Graduation requirement.

40 Laboratory Hours per week for 4 Weeks**Prerequisite:** MRT 110 Medical Record Science**MRT 202 Medical Record Science****3 Credits**

In-depth study of the Tumor Registry. Overview of ambulatory care, long term care and psychiatric facilities. In-depth treatment of basic hospital and vital statistics and application of the same.

2 Class Hours, 2 Laboratory Hours**Prerequisites:** MRT 110 Medical Record Science and BIO 132 Human Biology II**MRT 208 Advanced Medical Transcription****2 Credits**

Review of medical terminology emphasizing specialized terminology. Advanced medical transcription techniques through the use of recorded history and physical examinations, discharge summaries, consultation reports, operative reports and outpatient notes.

1 Class Hour, 2 Laboratory Hours**Prerequisite:** MRT 107 Medical Transcription**MRT 210 Medical Record Science****3 Credits**

Principles of management and the role of the supervisor in the medical record department. Developmental and operational phase of health information systems. Trends in health care delivery systems.

2 Class Hours, 2 Laboratory Hours**Prerequisite:** MRT 202 Medical Record Science**MRT 216 Clinical Practicum****1 Credit**

Enables the students to utilize the knowledge and skills obtained in the classroom and directed practice assignments. Students perform the functions of an actual medical record department and use the computer terminal, microfilm equipment and medical transcription word processing center.

2 Laboratory Hours**Prerequisites:** MRT 110 Medical Record Science and MRT 144 Directed Practice**MRT 222 Medical Legal Aspects****3 Credits**

Introduction to legal aspects of medical records. Legal basis for medical practice, confidentiality. Patient's "Bill of Rights," voluntary and involuntary release of medical information. Authorizations and consents, professional liabilities, medical-moral issues such as abortion, euthanasia, sterilization, artificial insemination.

3 Class Hours**Prerequisite:** MRT 202 Medical Record Science

MRT 236 Quality Assurance

Three components of medical care evaluation—admission, concurrent review and retrospective review of patient records, audited by the medical record technician. Federal and state regulations.

1 Class Hour, 2 Laboratory Hours

Prerequisite: MRT 110 Medical Record Science

MRT 245 Directed Practice

Directed practice experience in the hospital and related affiliation sites. Correlated with MRT 210 Medical Record Science to develop insight and skills into advanced medical record procedures.

16 Laboratory Hours

Prerequisites: MRT 202 Medical Record Science and MRT 144 Directed Practice

MRT 295 Medical Record Seminar

Detailed study and analysis of specific problems encountered in the administration of a medical record department. Correlated with directed clinical practice. Case study and extensive literature review.

2 Class Hours

2 Credits

4 Credits

2 Credits

MUSIC

MUS 101 Fine Art: Introduction to Music

Basic elements of music common to all forms of musical expression. Emphasis on developing listening habits, which bring the student to an informed awareness and understanding of music. Attendance at concerts and recitals.

3 Class Hours

3 Credits

MUS 105 Music Theory I

A beginning course in music theory, including basic rudiments of music. Pitch and rhythmic notation, scales and intervals. Ear training through melodic and rhythmic drills and dictation.

3 Class Hours

3 Credits

MUS 106 Music Theory II

Continuation of Music Theory I. Traditional harmony, exercises in melodic, rhythmic and harmonic dictation, aural analysis, beginning composition.

3 Class Hours

Prerequisite: MUS 105 Music Theory I or consent of instructor

3 Credits

MUS 110 17th and 18th Century Music

Music and musical styles of the 17th and 18th Centuries. Emphasis on the composers and their styles and the relationship of music to the social, political and other cultural reforms of the period. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: MUS 101 Introduction to Music or consent of instructor

3 Credits

MUS 111 19th Century Music

Important musicians and musical styles of the Romantic Period. Emphasis on developments in piano literature, the symphony orchestra and opera. Listening to selected recordings and attendance at local concerts. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: MUS 101 Introduction to Music or consent of instructor

3 Credits

MUS 112 20th Century Music

Important musicians and musical styles in the 20th Century. Emphasis on the trends and development of music in America. Leading European composers. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: MUS 101 Introduction to Music or consent of instructor

3 Credits

MUS 190 The College Choir

Students who sing in the College Choir receive one credit per semester. See page 29.

1 Credit

MUS 191 Broome Community College Music Performance

Students who participate in the recitals or concerts of the academically-associated Broome Community College Music Performance groups receive one credit per semester. See page 29.

1 Credit

MUS 299 Independent Study: Music

An individual student project concerned with advanced work in a specific area of music. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in music

1-3 Credits

NURSING

ADN 100 Meeting Basic Human Needs

Introduction to nursing concepts and principles. The total human being incorporating biophysiological and psychosocial components. Emphasis on maintaining homeostasis within the illness/wellness continuum. The needs approach, based on Maslow's Hierarchy of Human Needs, is emphasized. Skills in providing safe bedside nursing care, such as simple treatments, pharmacology and basic nutrition. Integrating knowledge of communication skills, nursing process, problem solving, mental mechanisms, normal responses to stress, crisis intervention, body responses to pathology. Adaptation of nursing intervention directed toward meeting basic needs of the chronically ill, the aging and those individuals facing death.

5 Class Hours, 6 Laboratory Hours

7 Credits

ADN 101 Nursing Care During the Life Cycle

The Life Cycle from conception to middle-age. Correlating basic human needs and the developmental tasks in each age group. The family cycle, as one of the tasks of the young adult. Emphasis on preparation for parenthood, the experience of parenthood, and the psychosocial implications of the young family. Learning principles identified and incorporated into the nursing process. Situational and maturational crises as normal aspects of the life cycle. Adaptation of nursing intervention directed toward meeting basic needs of the middle aged. Nursing intervention for diagnostic testing.

5 Class Hours, 6 Laboratory Hours

Prerequisites: ADN 100 Meeting Basic Human Needs

7 Credits

ADN 203 Immobility Concepts**4 Credits**

The nursing process as it meets the needs of individuals experiencing complex physiological and psychological problems due to immobility. Concepts of neurological, orthopedic and sensory deprivation nursing. Extended campus laboratory experiences are correlated with class content. Successful achievement in the extended campus laboratory is required.

3 Class Hours, 4½ Laboratory Hours

Prerequisites: ADN 101 Nursing Care During Life Cycle and BIO 132 Human Biology II

ADN 204 Regulatory Concepts**4 Credits**

The nursing process is applied to the needs of individuals with disturbances of the regulatory physiological mechanisms. Content includes nursing concepts of stress, fluids and electrolytes, endocrinology. Related health behavior and teaching. Extended campus laboratory experience is correlated. Successful achievement in the extended laboratory is required.

3 Class Hours, 4½ Laboratory Hours

Prerequisites: ADN 101 Nursing Care During Life Cycle and BIO 132 Human Biology II

ADN 205 Psychological Concepts I**2 Credits**

The nursing process as it meets the needs of individuals experiencing psychological stress. Psychiatric nursing concepts applied to behavioral disturbances. Extended campus laboratory experiences are correlated with class content. Successful achievement in the extended campus laboratory is required.

1 Class Hour, 3 Clinical Hours

Prerequisites: ADN 101 Nursing Care During Life Cycle and BIO 132 Human Biology II

ADN 206 I, I and O Concepts**4 Credits**

The nursing process as it meets the needs of individuals with complex physiological and/or psychological stress due to problems of inflammation, infection and obstruction. Extended campus laboratory experiences are correlated with class content. Successful achievement in the extended campus laboratory is required.

3 Class Hours, 4½ Clinical Hours

Prerequisites: ADN 101 Nursing Care During Life Cycle, ADN 203 Immobility Concepts, ADN 204 Regulatory Concepts, ADN 205 Psychological Concepts I, BIO 132 Human Biology I and BIO 150 Microbiology.

ADN 207 Oxygenation Concepts**4 Credits**

The nursing process is applied to needs of individuals experiencing disturbances of oxygenation. Broad concepts applied to problems of the hemopoietic, respiratory, vascular and cardiac systems. Extended campus laboratory experiences are correlated with class content. Successful achievement in the extended campus laboratory is required.

3 Class Hours, 4½ Clinical Hours

Prerequisites: ADN 101 Nursing Care During Life Cycle, ADN 203 Immobility Concepts, ADN 204 Regulatory Concepts, ADN 205 Psychological Concepts I and BIO 132 Human Biology II.

*TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS

ADN 208 Psychological Concepts II**2 Credits**

Continued application of the nursing process as it meets the needs of individuals experiencing psychological stress. Content includes psychiatric concepts applied to behavioral changes. Extended campus laboratory experiences are correlated with class content. Successful achievement in the extended campus laboratory is required.

1 Class Hour, 3 Laboratory Hours

Prerequisites: ADN 101 Nursing Care During Life Cycle, ADN 203 Immobility Concepts, ADN 204 Regulatory Concepts, ADN 205 Psychological Concepts I and BIO 132 Human Biology II.

ADN 296 Nursing Seminar I**1 Credit**

Seminar discussions and role playing exercises explore, in detail, decision making, values clarification and the setting of priorities within the context of clinical nursing situations. Emphasis on clinical accountability and the management of multiple patient care situations.

2 Seminar Hours

Prerequisites: Successful completion of all previous program requirements

ADN 297 Nursing Seminar II**1 Credit**

A broad survey course examining the effects of a changing society upon the delivery of health care. Licensure and nursing practice issues. The National League for Nursing achievement tests used as a guide for the individuals' preparation for licensure.

2 Seminar Hours

Prerequisites: Successful completion of all previous program requirements

ADN 298 Nursing Seminar III**0 Credits**

For those Nursing students who have transferred into the curriculum from other nursing programs, have passed the College's advanced-placement exam in nursing, or have not attended college for at least one year. Seminar discussions and role playing exercises designed to facilitate the student's adaptation to the role of the Associate Degree Nurse. Emphasis on problem solving, setting of priorities and utilization of the Nursing process in their daily activities.

1 Class Hour**PARALEGAL ASSISTANT**

All Paralegal Assistant courses are taught in the evening only.

PLA 110 Survey of Paralegalism*3 Credits**

Role of the paralegal and attorney. Introduction to jurisprudence and functions of administrative agencies. Local, state, federal courts. Introduction to contracts, torts, negligence, criminal procedure, real property law, law office management. Legal terminology.

3 Class Hours***PLA 120 Advanced Paralegalism****3 Credits**

Continuation of law office management. Introduction to research techniques, family law, surrogate, wills and estates, agency and partnership, bankruptcy, corporate law, commercial paper, workman's compensation with procedures and practices of each. Legal terminology.

3 Class Hours

Prerequisite: PLA 110 Survey of Paralegalism

- *PLA 200 Real Property Law** **3 Credits**
Comprehensive survey of law of real property emphasizing practical application to a paralegal function. Analysis of forms of deeds, bonds, notes, mortgages, assignments, discharges, purchase of contracts, leases, options. Training in searching title, basic understanding of abstracts of title, real property litigation, estates, condemnation and foreclosure.
3 Class Hours
- *PLA 205 Techniques of Research** **3 Credits**
Development of research skills through the use of digests, encyclopedias, reporter systems and practice manuals. Arrangement, use and maintenance of a law library (including the Supreme Court Library). All legal references, for assistance in diverse phases of law and the operation of those agencies and institutions.
3 Class Hours
Prerequisite: PLA 110 Survey of Paralegalism or 2 years experience in a law office.
- *PLA 210 Legal Drafting** **3 Credits**
Analysis of legal documents for writing style, clarity of meaning, conciseness, various types of composition of formal and informal letter writing, memos, reports. Refinement of basic communication skills.
3 Class Hours
Prerequisite: ENG 110 Written Expression I and PLA 205 Techniques of Research
- *PLA 215 Estates, Probates and Trusts** **3 Credits**
Disposition of decedent's property, law of intestate succession, execution and probate of wills, nature and creation of trusts and the administration of estates and trusts, estate and gift tax preparation.
3 Class Hours
- *PLA 220 Contracts** **3 Credits**
The law of contracts, their historical significance, formation, validity, interpretation, transfer of contractual rights. Assignment, third party beneficiaries, discharge, breach and remedies. (BUS 118 Business Law I may be substituted).
3 Class Hours
- *PLA 225 Family Law** **3 Credits**
Pleadings relative to the general practice of law in relationship to the family unit. Laws relating to marriage, divorce, annulment, custody and support, adoption, name change, guardianship, paternity. Written pleadings and necessary research pertaining to these aspects of family law.
3 Class Hours
- *PLA 226 Taxation Law for Paralegals** **3 Credits**
Principles of federal taxation, analysis of IRS code and related case law, emphasis on law and concepts of taxation, basic and advanced tax law terminology, litigation involving the IRS. Exploration of social changes and factors involving tax problems, current issues in tax reform, perspective of the paralegal regarding resolution of tax disputes.
3 Class Hours
- *PLA 240 Corporate Law** **1 Credit**
Types, uses and organization of the corporation, antitrust and securities law, mergers and consolidation, liquidation and dissolution.
1 Class Hour

- *PLA 250 Municipal Law** **1 Credit**
Structure and operations of local government in New York State. Evolution of local government in New York during the first two centuries of its existence. Laws, ordinances and operations.
1 Class Hour
- *PLA 260 Labor-Management Relations (Labor Law)** **1 Credit**
Labor-management relations in the public and private sectors. Taft-Hartley Act, National Labor Relations Act and Wagner Act, unfair labor practices, labor contracts, arbitration and mediation, availability of injunctions in labor disputes.
1 Class Hour
- *PLA 270 Vehicle and Traffic Law** **1 Credit**
Regulations of traffic within the State of New York. Emphasis on violations and traffic-related misdemeanors resulting from violation of the rules of the road and court proceedings resulting therefrom.
1 Class Hour
- *PLA 280 Litigation and Trial Preparation** **1 Credit**
Intake procedures, systems and analysis, concepts of jurisdiction and venue, parties to an action, pleadings, pre-trial procedures, motions and special practice, special proceedings, trials, judgments and appeals.
1 Class Hour
- *PLA 290 Landlord-Tenant Relations** **1 Credit**
Problems faced by landlords and tenants, private housing, live-in arrangements, covenants, leases, warranties. Tenant and landlord rights and obligations.
1 Class Hour
- *PLA 299 Independent Study: Paralegal** **1-3 Credits**
An individual student project in paralegal studies which is beyond the scope or requirements of the courses offered by the program. Conducted under the direction of a faculty member or attorney, and approved by the program coordinator.
Prerequisites: PLA 110 Survey of Paralegalism plus three additional hours in a 200 level PLA course

PHILOSOPHY

- PHI 102 General Philosophy** **3 Credits**
Meaning of philosophy, suggestions for reading philosophy, informal logic, methodology and basic philosophical terms including idealism, dualism, naturalism.
3 Class Hours
- PHI 103 Philosophy of Mind** **3 Credits**
Theories of major philosophers as to the nature and limits of human knowledge and the nature of reality. Problem of knowledge of the physical world, the mind-body problem, free-will problem, existentialist's view of man.
3 Class Hours

***TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS**

PHI 104 Philosophy of Religion**3 Credits**

Relation of religion and philosophy and an investigation of different concepts of God. Analysis of religious types and experiences, different attempts to justify religious beliefs. Investigation of the logic of religious experience through an analysis of the leading ideas in the philosophy of religion both as an historical and contemporary phenomenon.

3 Class Hours**PHI 111 Humanities****3 Credits**

Critical analysis of human development from the early beginnings to the present state through a thematic investigation of literature, philosophy, history and the arts. Classical, Medieval, Renaissance and Metaphysical Periods.

3 Class Hours**PHI 112 Humanities****3 Credits**

Critical analysis of human development from the early beginnings to the present state through a thematic investigation of literature, philosophy, history and the arts. Neoclassical, Romantic, Victorian, Early Modern and Late Modern Periods.

3 Class Hours**PHI 113 Humanities I****4 Credits**

A critical analysis of mankind's development from the early beginnings to the present through a thematic investigation of literature, philosophy, history and the arts. Classical, Medieval, Renaissance and Metaphysical Periods. For students in the Liberal Arts Honors Program, and others with permission.

4 Class Hours**PHI 114 Humanities II****4 Credits**

A critical analysis of mankind's development from the early beginnings to the present state through a thematic investigation of literature, philosophy, history and the arts. Neo-classical, Romantic, Victorian, Early Modern and Late Modern Periods. For students in the Liberal Arts Honors Program, and others with permission.

4 Class Hours**PHI 120 Verbal Reasoning****3 Credits**

To improve the students' ability in reasoning. Concentration on qualification, symbols, ambiguity, analysis and semantics. (Not offered in 1983-84 academic year).

3 Class Hours**PHI 201 Ethics: Moral Philosophy****3 Credits**

Main classical and modern ethical theories, including such theorists as Plato, Aristotle, Spinoza, Mill, Kant, Moore, Toulmin, Ayer, Westermarck. Comparison and contrast of normative and meta-ethical theories, the good life and how one should act, the meaning of moral judgments and the criteria of validity, justification of moral beliefs and the grounds of moral responsibility.

3 Class Hours**PHI 202 Logic****3 Credits**

Analysis and practical application of the elements of logic as they apply to thinking on both a linguistic and formal level. Forms of argument, informal and formal fallacies, significance of the emotions on decision making, inductive and deductive processes. Symbolizing arguments and formal proofs of validity.

3 Class Hours

Prerequisite: Any Philosophy (PHI) course or any Mathematics (MAT) course numbered MAT 139 or higher

PHI 203 Philosophical Issues**in American Education****3 Credits**

Philosophy of selected American educators, with attention on the historical development of the American educational system. Brief review of educational outlooks from antiquity to the present, including Plato, Aristotle, Rousseau. Analysis of educational issues and of key terms in education from philosophical perspective. Nature of the individual, the school and society and the underlying philosophical interrelations that may exist.

3 Class Hours**PHI 206 Social and Political Philosophy****3 Credits**

A philosophical study of the social/political organization of society through an examination of such topics as justice, authority, leadership, individual rights, and of the relationship between the state and various social institutions, such as family, business, church, and education.

3 Class Hours**PHI 299 Independent Study: Philosophy****1-3 Credits**

An individual student project concerned with advanced work in a specific area of philosophy. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in philosophy

PHYSICAL EDUCATION

Practically all of the Physical Education courses are half a semester in length. For the most part, the courses that take place outdoors are given in the first half of the fall semester or the second half of the spring semester; those courses that occur indoors are given in the second half of the fall semester or the first half of the spring semester.

PED 100 Archery**½ Credit**

Fundamentals of shooting—seven-step approach. Proper target shooting technique and form stressed.

4 Class Hours, 11 Laboratory Hours per half semester**PED 103 Backpacking****1 Credit**

A series of laboratories and lectures culminating in a four-day backpacking trip. Students learn to select, care for, and use properly the essential equipment, as well as some low cost alternatives to expensive items. The stress is on safety and low ecological impact camping.

15 Class Hours, 15 Laboratory Hours per semester**PED 106 Badminton****½ Credit**

Instruction and practice in the various strokes. Rules, terminology and equipment. Strategy for singles and doubles.

4 Class Hours, 11 Laboratory Hours per half semester**PED 109 Basketball****½ Credit**

Instruction and practice in the fundamental skills of passing, dribbling, shooting and defense. History, rules, tactics, and team play. Basketball as a carry-over sport. (Not offered in 1983-84 academic year).

4 Class Hours, 11 Laboratory Hours per half semester

PED 112 Bowling **½ Credit**
Bowling fundamentals including ball selection, grip, stance, approach and delivery. Etiquette, scoring, correction of basic mistakes in delivery. Classes are at off-campus site and students must pay for own games, shoe rental and transportation.
3 Class Hours, 12 Laboratory Hours per half semester

PED 115 Physical Conditioning **½ Credit**
A general physical conditioning class. Each student is pre-tested and then establishes his/her individual program. A selected battery of exercises (circuit) is utilized with some individual choice. (Formerly entitled Circuit Training and Conditioning).
3 Class Hours, 12 Laboratory Hours per half semester

PED 118 Field Hockey **½ Credit**
Basic skills needed for good competition in game situations. Emphasis on rules and responsibilities of each position on the team. Organized competition within the class. (Not offered in 1983-84 academic year).
4 Class Hours, 11 Laboratory Hours per half semester

PED 121 Golf **½ Credit**
Skills, rules, etiquette and strategy. Students required to play nine holes, providing their own transportation and greens fees. Clubs provided for those without.
4 Class Hours, 11 Laboratory Hours per half semester

PED 122 Horsemanship **1 Credit**
Basics of grooming, saddling and safety procedures. Development and expansion of riding skills. Elementary knowledge of horses, their care and maintenance. Two options available: 1. English 2. Western. (Additional fee and taught off campus).
8 Class Hours, 20 Laboratory Hours per semester

PED 127 Jogging **½ Credit**
Jogging as a possible leisure time activity. Physiological and psychological benefits, improvement of technique and basic principles of training. Individual works at own level and sets own goals. Distance usually worked: 2 miles.
3 Class Hours, 12 Laboratory Hours per half semester

PED 130 Karate **1 Credit**
Classical karate on the beginning and intermediate levels. Philosophy and brief history of karate. Basic katas (forms) together with pre-arranged sparring techniques. Free sparring with no body contact. Emphasis on physical conditioning and mental discipline.
8 Class Hours, 22 Laboratory Hours per semester

PED 132 Concepts in Physical Education **2 Credits**
Emphasis on the basic knowledge, understanding and values of physical education. To help students make important decisions about their own personal fitness.
30 Class Hours per semester

PED 139 Self Defense **½ Credit**
Brief explanation of karate, judo and other martial arts. Approximately 10 basic self-defense movements which, if properly acquired and practiced, can be applicable to many situations. Basic techniques of throwing, blocking, falling, punching and general body shifting motions. No definite dress required. A student should remember that exercises are meant to increase flexibility and endurance of muscles, and the dress should be a comfortable one for this purpose. Although this is not the formal karate class, the class will be conducted with formality and discipline.
3 Class Hours, 12 Laboratory Hours per semester

PED 142 Skiing **½ Credit**
Instruction and practice in all phases of skiing (beginning through advanced). Conduct, terminology, safety and equipment. Basic racing technique demonstrated and practiced where sufficient skill level and interest are indicated. Classes at an off-campus site; students must pay necessary fees and provide their own transportation.
3 Class Hours, 12 Laboratory Hours per half semester

PED 143 Cross Country Skiing **½ Credit**
Instruction and practice in cross-country skiing—beginning through advanced. Conduct, terminology, safety and equipment. Classes both on and off campus. Skis, poles, bindings provided; students responsible for boots and transportation. (Formerly entitled Ski Touring).
3 Class Hours, 12 Laboratory Hours per half semester

PED 145 Slimnastics **½ Credit**
Exercises for all muscles of the body. Duration of each exercise and number of exercises used during the class hour gradually increased. Music used for intensive exercise routines.
4 Class Hours, 11 Laboratory Hours per half semester

PED 147 Soccer (Women) **½ Credit**

PED 148 Soccer (Men) **½ Credit**
Instruction and practice in the fundamental skills of kicking, tackling, trapping, dribbling and heading. Rules and tactics. Team competition. Separate sections for men and women.
4 Class Hours, 11 Laboratory Hours per half semester

PED 154 Speedball **½ Credit**
A combination team sport involving skills common to soccer, basketball and football. Development of skills, rules and strategy of the game. Speedball is a fast moving, quick thinking game. (Not offered in 1983-84 academic year).
4 Class Hours, 11 Laboratory Hours per half semester

PED 169 Tennis **½ Credit**
Instruction and practice in the basic strokes—forehand, backhand, serve and volley. Rules, terminology and equipment. Strategy for singles and doubles.
4 Class Hours, 11 Laboratory Hours per half semester

PED 170 Trail Riding **½ Credit**
Basics of grooming, saddling and safety procedures. Development and expansion of riding skills—learning to cope with natural hazards like creeks, traffic, terrain. Elementary knowledge of horses, their care and maintenance. (Taught off campus and an additional fee is required).
4 Class Hours, 11 Laboratory Hours per half semester

PED 172 Volleyball **½ Credit**
A basic course in the fundamentals of power volleyball. Team strategy, history and rules. Drills and competitive play.
4 Class Hours, 11 Laboratory Hours per half semester

PED 175 Weight Training **½ Credit**
Individualized work on weight machine. Student selects activities along with instructor's guidance. Emphasis on improvement of weaknesses and a balanced approach. Physical fitness, principles of training. (Not offered in 1983-84 academic year).
3 Class Hours, 12 Laboratory Hours per half semester

PED 299 Independent Study**½ or 1 Credit**

Student undertakes a project of own choice with guidance from faculty member. The project is intended for a student who has completed requirements.

Prerequisite: 2 Semester Hours in Physical Education

PHYSICAL SCIENCE**PHS 111 Physical Science for Today****3 Credits**

Beginnings of astronomy, the earth and moon, planets and satellites, the sun and other stars, cosmology. Chemistry of our atmosphere, weather and methods of modification, water cycle and pollution. Composition of the earth's crust, erosional processes, earthquakes and volcanoes, plate tectonics, nuclear radiation, man and his environment. Required field trips supplement classroom experience.

2 Class Hours, 2 Laboratory Hours

PHS 113 Physical Science—Astronomy**4 Credits**

The Copernican and Ptolemaic models of the solar system. The planets, sun, moon and comets. Stellar magnitudes and evolution of stars. The size and age of the universe and modern developments in astronomy and cosmology. Required field trips supplement classroom experience.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MAT 003 B Basic Mathematics Review or equivalent

PHS 114 Physical Science—Meteorology**4 Credits**

The atmosphere—composition, circulation, energy transfer, observations and instrumentation used. Weather phenomena—air masses, weather patterns, severe weather and optics. Forecasting through observations and plotting. Introduction to climatology, the control and classification of climates based upon principles of meteorology. Required field trips supplement classroom experience.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MAT 003B Basic Mathematics Review or equivalent

PHS 115 Physical Science—Geology**4 Credits**

Crystals, minerals, rocks—their structure and identification. Erosion of the crust, its uplift and deformation. Earthquakes and the interior of the earth, geologic dating and the physical history of the earth. Plate tectonics and continental drift, ecology from a geologic viewpoint. Required field trips supplement classroom experience.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MAT 003B Basic Mathematics Review or equivalent

PHS 116 Physical Science—Energy & Environment**4 Credits**

Basic physical principles and the role of these principles in understanding and appreciating the problems of the environment. Problems of pollution and depletion of natural resources. Application of physics in the everyday world. Required field trips supplement classroom experience.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MAT 003B Basic Mathematics Review or equivalent

PHYSICS**PHY 100, 101 Preparatory Physics I and II****4, 4 Credits**

Composition and resolution of vectors. Statics and dynamics. Conservation laws, wave motion, sound and light. Thermodynamics, electricity and magnetism. The physics of the atom.

4 Class Hours each

Prerequisite: MAT 003 Basic Mathematics Review or equivalent

PHY 117 Physics**3 Credits**

Vectors, linear motion, energy, momentum, electric fields, potential difference, Ohm's law, d-c circuits, motion of charges in magnetic fields, electromagnetic induction. Mirrors and lenses, nature of light, atomic structure, production of X-rays, radioactive decay, nuclear reactions, interaction of radiation with matter, radiation detection, radiation protection standards.

2 Class Hours, 2 Laboratory Hours

Prerequisite: MAT 003 Basic Mathematics Review or equivalent

PHY 141 Physics**4 Credits**

Composition and resolution of vectors, forces in equilibrium, moments of forces, elasticity, linear and projectile motion, forces and motion, rotation, work and energy, impulse and momentum, harmonic motion, fluid mechanics, temperature, thermal expansion, heat. For Engineering Technology students.

3 Class Hours, 2 Laboratory Hours

Corequisite: MAT 141 Algebra and Trigonometry or equivalent

PHY 142 Physics**4 Credits**

Thermodynamics, thermal properties of gases, wave motion and sound, electrostatics, direct current, magnetism, electromagnetic induction, alternating current, electromagnetic radiation, illumination, reflection and refraction of light, mirrors and lenses, optical instruments, diffraction, nuclear energy. For Engineering Technology students.

3 Class Hours, 2 Laboratory Hours

Prerequisite: PHY 141 Physics

PHY 144 Physics II-E**4 Credits**

Thermodynamics, wave motion and sound, photometry, reflection, refraction, dispersion, light, mirrors and lenses, optical instruments, diffraction, lasers, electrostatics, potential, current, resistance, magnetism, semiconductor theory. For Electrical Technology students.

3 Class Hours, 2 Laboratory Hours

Prerequisite: PHY 141 Physics, EET 121 Electrical Circuits

PHY 161 Physics**4 Credits**

Structure and language of physics. Standard units of measurement of length, mass and time. Basic mathematical foundation: elementary trigonometry, vector algebra, powers of ten and significant figures. Mechanics: motion, Newton's Laws, work, energy and momentum principles, rotation. Waves and wave phenomena, mirrors and lenses, optical instruments, sound. First course in an introductory non-calculus sequence. For Liberal Arts students who need a laboratory science.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MAT 141 Algebra and Trigonometry or equivalent

PHY 162 Physics **4 Credits**
 Concepts of heat and temperature, kinetic theory, thermodynamics. Electricity and magnetism: electrostatics, electrical circuits, electromagnetic phenomena. Modern physics: relativity, quantum theory, atomic structure radioactivity. Second half of introductory physics course for Liberal Arts students who need a laboratory science.
3 Class Hours, 3 Laboratory Hours
Prerequisite: PHY 161 Physics

PHY 181 Engineering Physics I **4 Credits**
 Vectors, equilibrium, kinematics, Newton's Laws of Motion, centripetal force, work and energy, impulse and momentum, rotation, elasticity, harmonic motion, hydrostatics and hydrodynamics.
3 Class Hours, 2 Laboratory Hours
Corequisite: MAT 163 Calculus with Analytic Geometry I or MAT 171 Engineering Calculus with Analytic Geometry I

PHY 182 Engineering Physics II **4 Credits**
 Relativistic mechanics, Coulomb's Law, electrostatic field, potential, capacitance, direct currents, magnetic force on currents, magnetic field of a current, induced emf, inductance, alternating currents.
3 Class Hours, 2 Laboratory Hours
Prerequisite: PHY 181 Engineering Physics I
Corequisite: MAT 164 Calculus with Analytic Geometry II or MAT 172 Engineering Calculus with Analytic Geometry II

PHY 281 Engineering Physics III **3 Credits**
 Wave motion, sound, temperature, calorimetry, heat transfer, elementary thermodynamics, kinetic theory, geometrical optics, optical parts and instrumentation, physical optics, interferometry and polarization.
3 Class Hours
Prerequisites: 1 year of calculus and PHY 181 Engineering Physics I or equivalent

PHY 282 Engineering Physics IV **3 Credits**
 Quantum description of waves and particles, Bohr's model of atomic structure, Schrodinger's equation, X-rays, quantization of angular momenta, atomic spectra, introduction of solid state physics, nuclear radiation detection instruments, nuclear force, binding energy of stable nuclei, radioactive decay, low energy nuclear reactions, neutrons, fission, fusion.
3 Class Hours
Prerequisites: 1 year of calculus and PHY 182 Engineering Physics II

POLITICAL SCIENCE

POS 201 Introduction to American Government **3 Credits**
 American political institutions, processes and behavior. The relationships among cultural, legal and social aspects of the political system. Structure, organization and function of political parties, pressure groups and mass media. Application to contemporary issues and events.
3 Class Hours

POS 203 International Relations **3 Credits**
 Basic concepts and principles of world politics. International conflict resolution, international organizations, the struggle for power. Factors affecting the relationships among the major powers. Role of diplomacy, alliances, war and peace in the world arena. (Not offered during 1983-84 academic year).
3 Class Hours

POS 204 American State and Local Government **3 Credits**
 Theory and practice of state and local government, utilizing a problem-solving or "policy" approach. Students are encouraged to explore in depth the workings of city and county governments locally.
3 Class Hours

POS 299 Independent Study **1-3 Credits**
 An independent student project which is beyond the scope of courses currently offered by the department, directed by a faculty member with approval of the department chairperson.
Prerequisite: 3 semester hours of political science

PSYCHOLOGY

PSY 100 Psychology of Personal Adjustment **3 Credits**
 Investigation of bio-cultural factors which influence human behavior and study of the development of well-adjusted personality. Attention is directed to the learning and thinking the individual employs in solving personal problems in everyday living. (This course cannot be used as a prerequisite for other psychology courses.)
3 Class Hours

PSY 103 Psychology of Adulthood **3 Credits**
 Investigation of the continuity-change pattern that characterizes normal adulthood (20 to 60 years). Identification of individual responses to life crises. Introduction to skills that facilitate meeting self-selected goals and skills that assist others to fulfill their goals.
3 Class Hours

PSY 110 General Psychology **3 Credits**
 Definition and description of psychology. Functions of the neural system, sensation and perception, learning, memory, motivation, emotion, conflict and frustration, personality, social psychology. Methods and statistical applications, history and fields of psychology.
3 Class Hours

PSY 150 to 200 Special Topics in Psychology **1 Credit**
 Topics of interest to a (class size) group will be explored. Prospective students should make their request at least three weeks before the end of the preceding semester. Possible topics, for example, could include stress management or child rearing styles.

PSY 211 Child Development **3 Credits**
 The growth, maturation and development of children, including mental and motor phases, learning, motivation and personality formation.
3 Class Hours
Prerequisite: PSY 110 General Psychology

PSY 212 Adolescent Development**2 Credits**

The developmental tasks of the adolescent years. Influence of people and institutions on self-concept. Physical, psychological, intellectual effects and intellectual growth

3 Class Hours**Prerequisite:** PSY 110 General Psychology**PSY 214 Abnormal Psychology****3 Credits**

Description and criteria for normal and abnormal personality. Dynamic processes of adjustment, the coping process. Definition and description of sociopathic, psychopathic, neurotic and psychotic behavior. Development of both functional and organic disorders

3 Class Hours**Prerequisite:** PSY 110 General Psychology**PSY 217 Counseling and Interviewing****3 Credits**

Varied methods of interviewing and counseling, group dynamics employing current theories, situational examples and means for determination of method to be used. Practical cases in social services, clinics, hospitals and educational institutions. Overall training and personality of the counselor.

3 Class Hours**Prerequisite:** PSY 110 General Psychology**PSY 223 Intelligence and the Mentally Retarded****3 Credits**

The several meanings of the concept of intelligence, distribution of intelligence in populations, development and organization of intelligence at different levels, concepts of retardation. The various levels and causations of retardation, development at all chronological ages, learning and employment expectations, methods of assisting with behavioral improvement, cooperative social agencies.

3 Class Hours**Prerequisite:** PSY 110 General Psychology**PSY 227 Behavior Modification****3 Credits**

Principles of behavior modification using classical and operant techniques. Practical applications of these principles to the fields of child care, psychotherapy and correctional institutions.

3 Class Hours**Prerequisite:** PSY 110 General Psychology**PSY 299 Independent Study****1-3 Credits**

An individual student project in psychology which is beyond the scope or requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairperson.

Prerequisite: PSY 110 General Psychology plus 3 additional hours in a 200 level PSY course

RADIOLOGIC TECHNOLOGY**RAD 100 Introduction to Radiologic Technology****2 Credits**

Part I Overview of radiologic technology through the study of its historical development, its placement in the medical field today, the organization of a modern radiology department, professional ethics, and medicolegal aspects of radiology. **Part II** Introduction and orientation to the radiology department in an affiliated hospital.

First half semester, 2 Class Hours**Second half semester, 16 Laboratory Hours****RAD 101 Radiologic Technology I****3 Credits**

Introduction to the basic principles of radiographic imaging including recording media, processing methods, radiographic quality and radiographic accessories. Lecture and laboratory are coordinated to enhance these fundamental concepts.

3 Class Hours, 1 Laboratory Hour**RAD 102 Radiologic Technology II****3 Credits**

Advanced study of the factors contributing to the radiographic image.

3 Class Hours**Prerequisite:** RAD 101 Radiologic Technology I or permission of instructor**RAD 103 Positioning I****1 Credit**

Instruction and practice in radiographic positioning of the appendicular skeleton.

3 Laboratory Hours**RAD 104 Positioning II****1 Credit**

Instruction and practice in radiographic positioning of the axial skeleton.

3 Laboratory Hours**Prerequisite:** RAD 131 Clinical Education I**RAD 110 Methods of Patient Care****2 Credits**

Patient care procedures routinely performed in the radiology department. Basic medical terminology for the student radiographer.

2 Class Hours, 1 Laboratory Hour**RAD 115 Radiation Protection****1 Credit**

Interaction of radiation with living organisms, particularly as related to man. Emphasizes basic radiation protection, its philosophy and rules governing the application of ionizing radiation on humans.

1 Class Hour**RAD 131 Clinical Education I (Winterim)**

Clinical assignment devoted to observation and application of elementary radiographic procedures under direct supervision in a cooperating hospital. (Successful achievement is a graduation requirement.)

2 Weeks of instruction

Prerequisites: BIO 131 Human Biology I and RAD 100 Introduction to Radiologic Technology and RAD 110 Methods of Patient Care or permission of instructor.

RAD 132 Clinical Education II**2 Credits**

Observation and clinical experience for the development of competency involving elementary radiographic procedures in an affiliated hospital.

16 Laboratory Hours

Prerequisite: RAD 131 Clinical Education I (Winterim) or permission of instructor

RAD 133 Clinical Education III (Summer Term I) **3 Credits**
Clinical experience for the development of competency involving general radiographic procedures in an affiliated hospital.
40 Laboratory Hours
Prerequisite: RAD 132 Clinical Education II and BIO 132 Human Biology II or permission of instructor

RAD 203 Positioning III **1 Credit**
Laboratory instruction and practice in positioning techniques involving the skull and facial bones.
3 Laboratory Hours
Prerequisite: RAD 133 Clinical Education III or permission of instructor

RAD 210 Radiologic Physics **4 Credits**
Physics of radiographic equipment, including fundamental electronics, X-ray production, the X-ray tube and related circuitry, and preventive maintenance.
4 Class Hours
Prerequisite: PHY 117 Physics or permission of instructor

RAD 216 Imaging Modalities **1 Credit**
Introduction to the principles of computerized axial tomography, nuclear medicine and ultrasound.
1 Class Hour
Prerequisite: RAD 210 Radiologic Physics or permission of instructor

RAD 220 Radiologic Pathology **2 Credits**
A presentation of the various medical and surgical diseases and their relationship to radiographic procedures.
2 Class Hours
Prerequisite: BIO 132 Human Biology II or permission of instructor

RAD 225 Special Radiographic Procedures **4 Credits**
Introduction to radiographic examinations involving surgical procedures and specialized equipment.
3 Class Hours, 2 Laboratory Hours
Prerequisite: RAD 230 Clinical Education IV or permission of instructor

RAD 230 Clinical Education IV **2 Credits**
Practical application of advanced positioning techniques with emphasis on the skull and facial bones.
16 Laboratory Hours
Prerequisite: RAD 133 Clinical Education III (Summer) or permission of instructor

RAD 231 Clinical Education V (Winterim II)
Clinical assignment devoted to the application of radiographic procedures under direct supervision in a cooperating hospital. (Successful achievement is a graduation requirement.)
2 Weeks of Instruction
Prerequisite: RAD 230 Clinical Education IV or permission of instructor

RAD 232 Clinical Education VI **2 Credits**
Practical application of advanced radiographic procedures under direct supervision in an affiliated hospital.
16 Laboratory Hours
Prerequisite: RAD 231 Clinical Education V (Winterim) or permission of instructor

RAD 233 Clinical Education VII **3 Credits**
Clinical experience for the development of competency.
40 Laboratory Hours

RAD 245 Radiobiology **2 Credits**
Radiobiology and advanced radiation protection procedures related to diagnostic and therapeutic uses of radiation.
2 Class Hours
Prerequisite: RAD 210 Radiologic Physics or permission of instructor

RAD 250 Image Assessment **2 Credits**
The basic principles and techniques of quality assurance testing presented and illustrated through laboratory experiments. Major emphasis on the tests and measurements used to analyze imaging systems with minimum information loss.
2 Class Hours, 1 Laboratory Hour
Prerequisite: RAD 210 Radiologic Physics or permission of instructor

RAD 295 Seminar in Radiography **2 Credits**
Preparation of the technical report and its organization for both written and oral presentation. Readings in current literature and journals.
2 Class Hours
Prerequisite: Senior Year Status

READING AND STUDY SKILLS

RDG 090 Reading Fundamentals **3 Credits**
Individual diagnosis of a student's reading strengths and weaknesses, development and implementation of a program to upgrade basic skills. Content to vary with individual students. (This course cannot count for credit toward a degree).
2 Class Hours, 2 Laboratory Hours

RDG 100 College Reading **3 Credits**
An individualized course emphasizing vocabulary expansion, inferential and critical comprehension, and flexible rate. Instruction and practice in the application of reading skills to specific content areas. (This course can be used only to satisfy an elective choice).
2 Class Hours, 2 Laboratory Hours

RDG 104 Reading for International Students **3 Credits**
Practice of oral and silent reading in English for international students, with emphasis on vocabulary expansion and reading comprehension. Articles and other short selections to be read and discussed in class.
3 Class Hours

RDG 110 Rapid Reading **1 Credit**
Development of skills characteristic of the mature reader. Examination of structure of material, emphasis on identification of purpose, flexibility of rate. Use of controlled readers, reading accelerators.
2 Class Hours

The following courses are limited-credit activities for students wishing to enhance various study skills:

LRS 101 Study Management **½ Credit**

General principles of academic success, relationship of outside work and study, scheduling and organizing time, study and concentration. Students will construct a working study schedule.

3 Class Hours, 3 Weeks

LRS 102 Memory and Exams **½ Credit**

Theories of memory. Methods of review, strategies for taking essay and objective examinations.

3 Class Hours, 3 Weeks

LRS 103 Textbook Mastery **½ Credit**

Use of college textbooks as study aids, principles of effective text reading, text study systems. Extensive application of these principles in the student's own textbook.

3 Class Hours, 3 Weeks

LRS 104 Listening and Notetaking **½ Credit**

Examination of organizational patterns as they exist in oral communication. Exploration of systems on note-taking, and application of systems to student's own lectures and notes.

3 Class Hours, 3 Weeks

LRS 110 The Research Paper **1 Credit**

Shaping the paper: development of a topic, location of appropriate resources and digestion of the material. Writing the paper: outlining, effective composition and proper form. A hands-on approach in which students actually research a topic and compose a term paper.

2 Class Hours for 8 Weeks

LRS 120 The Art of Thinking **1 Credit**

Logic as an art. Logical principles taught in imaginative ways to achieve understanding. Emphasis on the practice of reasoning. Fundamental logical rules are taught as tools to enable the students to gain experience and confidence in thinking about issues that are important to them.

2 Class Hours for 8 Weeks

SECRETARIAL SCIENCES

Note—SEC 101A, 101B and 101C Typewriting (below) were formerly combined in SEC 101 Typewriting, which is no longer offered.

SEC 101A Typewriting **1 Credit**

Introduction to the electric typewriter keyboard and machine operations. Development of basic skill building in typing exact copy by touch for 3 minutes with a maximum of 3 errors.

2 Class Hours, 3 Laboratory Hours, 5-Week Course

Prerequisite: For international students, English as a Second Language or permission of instructor

SEC 101B Typewriting **1 Credit**

Continuation of skill building with emphasis on pacing and rhythm drills. Development of speed and accuracy in typing exact copy by touch for 5 minutes with a maximum of 5 errors.

2 Class Hours, 3 Laboratory Hours, 5-Week Course

Prerequisite: SEC 101A Typewriting or equivalent

SEC 101C Typewriting **1 Credit**

Development of basic techniques in preparing typewritten letters, horizontal and vertical centering exercises, memorandums, tabulations, outlines, manuscripts.

2 Class Hours, 3 Laboratory Hours, 5-Week Course

Prerequisite: SEC 101B Typewriting or equivalent

Note—SEC 102A, 102B and 102C Typewriting (below) were formerly combined in SEC 102 Typewriting, which is no longer offered.

SEC 102A Typewriting **1 Credit**

Advanced skill building with emphasis on pacing and rhythm drills. Development of speed and accuracy in typing exact copy by touch for 5 minutes with a maximum of 5 errors.

2 Class Hours, 3 Laboratory Hours, 5-Week Course

Prerequisite: SEC 101C Typewriting, ability to type without looking at keys and a 5-minute timing at 41 net words per minute with 5-error maximum

SEC 102B Typewriting **1 Credit**

Development of advanced techniques in typing different styles of business letters, manuscripts, memorandums.

2 Class Hours, 3 Laboratory Hours, 5-Week Course

Prerequisite: SEC 102A Typewriting or equivalent

SEC 102C Typewriting **1 Credit**

Development of advanced techniques in typing different styles of tabulations, financial statements, business forms, employment application data.

2 Class Hours, 3 Laboratory Hours, 5-Week Course

Prerequisite: SEC 102A Typewriting or equivalent

SEC 109 Basic Transcription **3 Credits**

Designed to improve understanding of basic sentence structure, grammar, business vocabulary and punctuation as related to the business world. Practical application through exercises at the typewriter on rough draft copy.

3 Class Hours

Prerequisite: SEC 101A, B or equivalent or concurrent enrollment in SEC 101A, B.

SEC 110 Shorthand **3 Credits**

Beginning course in Gregg Shorthand, Series 90 System. Basic principles to promote the ability to read fluently from plates and notes. Longhand and typewritten transcription from shorthand notes dictated from unfamiliar material at minimum rate of 60 words a minute.

2 Class Hours, 3 Laboratory Hours

Prerequisite: SEC 101 A, B and C Typewriting or equivalent or concurrent enrollment in SEC 101 A, B and C Typewriting

SEC 111 Shorthand and Transcription **3 Credits**
 Development of a minimum rate of 70 words per minute shorthand speed, dictated from unfamiliar material, with efficient transcription techniques to produce typewritten mailable transcripts. Emphasis on shorthand speed building while integrating the correct usage of principles of grammar, spelling, punctuation, capitalization, vocabulary, numbers, word division, words often confused.
2 Class Hours, 3 Laboratory Hours
Prerequisites: SEC 110 Shorthand or equivalent and SEC 101 A, B and C Typewriting or equivalent and SEC 109 Basic Transcription or concurrent enrollment

SEC 130 Freshman Orientation **½ Credit**
 Introduction to the College and departmental policies and procedures. Discussions pertaining to the Secretarial Sciences options and career paths. A review of the College's services available for students.
1 Class Hour Bi-weekly

SEC 151 Business Communications **3 Credits**
 Development of desirable written communication style. Review of basic writing mechanics. Composition of letters of inquiry and reply, claim and adjustment, credit and collection, sales and promotion, application. Memorandums, news releases, short reports, telegrams.
3 Class Hours
Prerequisite: SEC 101 A, B and C Typewriting or equivalent and SEC 109 Basic Transcription

SEC 210 Executive Typewriting **3 Credits**
 Training in advanced typing techniques and magnetic keyboard equipment. Emphasis on preparing documents for law, insurance, real estate, investment, education. Continuation of typewriting speed building.
2 Class Hours, 2 Laboratory Hours
Prerequisites: SEC 102 A, B and C Typewriting and SEC 240 Office Practice

SEC 212 Technical Typewriting **3 Credits**
 Training in understanding the correct procedures in preparing typewritten technical materials and magnetic keyboard equipment. Emphasis on typing equations, formulas, laboratory reports. Continuation of typewriting speed building.
2 Class Hours, 2 Laboratory Hours
Prerequisites: SEC 102 A, B and C Typewriting and SEC 240 Office Practice

SEC 232 Specialized Dictation: Executive **3 Credits**
 Emphasis on increasing shorthand speeds and improving production of mailable typewritten transcripts through an increased knowledge of basic information and vocabulary from the specialized areas of investment, law, insurance.
2 Class Hours, 3 Laboratory Hours
Prerequisites: SEC 111 Shorthand and Transcription and SEC 102 A and B Typewriting

SEC 234 Specialized Dictation: Engineering **3 Credits**
 Emphasis on increasing shorthand speeds and improving production of mailable typewritten transcripts through an increased knowledge of basic information and vocabulary from the specialized areas of aerospace, life sciences, synthetics, hydrocarbons, petrochemicals, electronics, communications, computer, nucleonics.
2 Class Hours, 3 Laboratory Hours
Prerequisites: SEC 111 Shorthand and Transcription and SEC 102 A and B Typewriting

SEC 236 Machine Transcription **3 Credits**
 Emphasis on increasing skill in transcribing recorded materials. Continuing development of knowledge of business vocabulary, correct usage of principles of grammar, punctuation, spelling in the machine transcription of business documents.
2 Class Hours, 2 Laboratory Hours
Prerequisites: SEC 102 A and B Typewriting and SEC 151 Business Communications

SEC 240 Office Practice **2 Credits**
 Advanced typing material on selected topics using various typewriters. Practical experience in operation of calculating, duplicating, transcribing machines, and magnetic keyboard equipment.
4 Laboratory Hours
Prerequisites: SEC 111 Shorthand and Transcription and SEC 102 A, B and C Typewriting

SEC 242 Office Procedures **3 Credits**
 Final preparation for an office career. Business activities related to word-processing, postal and shipping services, telephone procedures, travel arrangements, planning meetings, banking services, application of filing procedures.
3 Class Hours
Prerequisite: For Office Services Assistant students — SEC 236 Machine Transcription
 For Executive and Industrial Secretarial students—SEC 151 Business Communications and SEC 232 or 234 Specialized Dictation and SEC 240 Office Practice

SEC 246 Office Machines **3 Credits**
 Practical experience in the operation of various typewriters including magnetic keyboard equipment, calculators, mimeo and spirit duplicators, transcribing and dictating equipment.
2 Class Hours, 3 Laboratory Hours
Prerequisite: SEC 101 A and B Typewriting and/or concurrent enrollment in SEC 101 C Typewriting and SEC 109 Basic Transcription
Corequisite: SEC 248 General Office Procedures

SEC 248 General Office Procedures **3 Credits**
 Analysis of the basic tasks performed by the office employee. How to apply for and secure the office position. Filing systems and procedures, telephone and telegram services, postal information, office supplies and equipment.
3 Class Hours
Prerequisite: SEC 101 A and B Typewriting and/or concurrent enrollment in SEC 101 C Typewriting and SEC 109 Basic Transcription
Corequisite: SEC 246 Office Machines

SEC 260 Directed Secretarial Experience—**Model Office****2 Credits**

Secretarial students are required to work at least four hours weekly in the model office to gain practical working knowledge by producing various types of campus communications.

4 Laboratory Hours

Prerequisites: For Executive and Engineering Secretarial students—SEC 240 Office Practice or concurrent enrollment

For Office Services Assistant students—SEC 236 Machine Transcription or concurrent enrollment

SEC 261 Extended Secretarial Experience**— Model Office****2 Credits**

Continuation of SEC 260 Directed Secretarial Experience—Model Office, with emphasis on advanced word processing training and professional development. Students are required to assume more demanding and sophisticated responsibilities than in SEC 260.

4 Laboratory Hours

Prerequisites: SEC 260 Directed Secretarial Experience—Model Office. Office Services—SEC 236 Machine Transcription. Industrial Option—SEC 234 Specialized Dictation: Engineering and SEC 240 Office Practice. Executive Option—SEC 232 Specialized Dictation: Executive and SEC 240 Office Practice or approval of the Model Office coordinator and department chairperson

SEC 299 Independent Study**1-4 Credits**

Advanced investigation or research in an individual student's major field of study. Under the guidance of a faculty member, the independent study concerns material beyond the scope and depth of the ordinary course offering. Only one independent study course is allowed per semester.

Prerequisite: Approval of faculty member and department chairperson

SIGN LANGUAGE***HUS 120 Sign Language****3 Credits**

Introduction to total communication as a means of conversing with the deaf. Ameslan (American Sign Language), fingerspelling, numbers, idioms, non-verbal communication, singing songs, poems, stories, psychology of the deaf.

3 Class Hours***HUS 220 Intermediate Sign English****3 Credits**

Intermediate Sign English (Ameslish) is straight English syntax using Ameslan based on conceptual signs in English syntax.

3 Class Hours

Prerequisite: HUS 120 Sign Language or permission of instructor

TAUGHT EVENINGS ONLY AND WHEN ENROLLMENT PERMITS*SOCIAL SCIENCE (INTERDISCIPLINARY)****SOS 120 Science Technology and Society****3 Credits**

A study of the interaction of the forces of science and technology with contemporary society, such as government, industry, family, education and organized religion. In addition, students examine the major views (utopian optimist vs. dystopian pessimist) on our contemporary scientific technology. Examine such current topics as recombinant DNA research, space colonization, artificial intelligence, computers.

3 Class Hours**SOS 130 Man, Technology and Environment****3 Credits**

Biological, economic and political dimensions of the environmental crisis. The conditions created by population growth, a rising standard of living, the increased demand on natural resources, and the advance of technology. Alternative strategies to deal with pollution and energy problems.

3 Class Hours**SOS 146 Aging: An Overview****3 Credits**

Multidisciplinary analysis of the bio-psycho-social characteristics of older persons. Examination of major issues and dynamics involved in the process of growing old.

3 Class Hours

Prerequisite: PSY 110 General Psychology or permission of instructor.

SOS 150 Introduction to Human Service Work**6 Credits†**

Treatment modalities, goal planning, facility usage, counseling, helping skills, principles of human development, etiology, normalization, detection. Institutionalization effects, empathy training, evaluation, problem solving, transactional skills, theoretical systems, ethical issues. Psychoactive drugs, rehabilitative and rehabilitative programs, community services.

†Credit available only to those who complete successfully a certified institution-based training program and credit is only applicable toward the Associate in Science degree in the Liberal Arts Division's Mental Health and Retardation Emphasis. Credit cannot be used to fulfill other social science requirements.

SOS 155 Media and Society**3 Credits**

Emergency and contemporary effects of the social institution of mass communication—familial, economic, political, educational, religious and recreational effects. Consideration of the major print and electronic media and their particular roles and influences. News reporting as a profession and as a business. Impact of advertising upon the media and the media's impact on advertising. The interrelationships of mass communication and popular culture.

3 Class Hours**SOS 160-169 Case Studies in Ethnicity**

A sociological analysis of the origins and experiences, the cultural patterns and social relationships of Americans from various ethnic backgrounds.

SOS 160 The Italian American**1 Credit**

Deals with Italian Americans as an initial attempt to focus attention on ethnic groups and their persistent impact.

1 Class Hour**SOS 170-179 Contemporary Cultures**

Studies in comparative cultures featuring social, political, economic, literary/artistic detail. The United States and at least one foreign culture compared and contrasted as a means of gaining insight into and understanding both.

SOS 170 United States and the Mideast**3 Credits**

Examination of the cultural and political dimensions which underlie current U.S.-Middle East relations and conflicts both internal and external to the region. Historical perspective on comparative cultures and value systems. Political and cultural differences. Energy security, strategic importance to the U.S., and Arab-Israeli conflict, the Gulf states, Egypt, Turkey, Iran.

3 Class Hours**SOS 220 Post-Industrial Civilization:****Honors Seminar****4 Credits**

Study of the planet as an interdependent unit facing the challenge of survival with hemispheric differences between "post-industrialized" and "non-industrialized" societies. Interconnections between economic, political, social systems with varying values and traditions. Major works in studies of the future examined for possible answers to such basic survival questions as problems of population, production and distribution of food, energy and other essential resources, ultimate difficulties of pollution and waste disposal.

4 Class Hours**SOS 221 U.S. Foreign Policy****Since World War II****4 Credits**

Domestic roots of policy making, critical analysis of principles and conduct of policy making, issues and arenas of U.S. involvement. For students in the Liberal Arts Division's Honors Program, and others with permission.

4 Class Hours**SOS 222 Political Economy****4 Credits**

Historical account of the rise of capitalism and its supporting ideology. An appraisal of the successes and failures of capitalism, of its changing form in Europe and America, and of its future. A critique of capitalism from the "conservative, liberal and radical" perspectives, which examine the major ideas of Friedman, Keynes, Galbraith and Marx, among others. For students in the Liberal Arts Honors Program, and others with permission.

4 Class Hours**SOS 275 Honors Internship Seminar****3 Credits**

Opportunity for Liberal Arts honors students to have a work experience in the professional field in which they plan to major, as they intern in Broome County Governmental or non-profit human services agencies.

1 Class Hour, 8 Practicum Hours**SOS 288 Seminar in Community Social****Service Organizations****3 Credits**

Study of federal, state and local agencies, their functions, limitations and interrelationships. Emphasis on determining the structure and purpose of an agency as related to delivery of human services. A beginning, working knowledge of how to integrate human service skills into over-all activities in the field will be provided. Weekly field work in a selected agency required.

2 Class Hours, 2 Laboratory Hours

Prerequisites: 6 Credits in psychology or sociology, 3 of which may be taken concurrently.

SOS 290 Social Science Field Experience**3 Credits**

Introduction to the practical issues of the "helping relationship" and an understanding of agency operations. Each student to spend a minimum of 90 hours working in community social and educational agencies. Weekly seminars, outside reading and written reports are required. During the seminars specific helping techniques such as facilitating, goal-setting, reinforcing and supporting will be analyzed.

1 Class Hour

Prerequisite: 3 Credit hours in psychology or sociology plus completion of or concurrent enrollment in 3 additional credit hours in either of these areas.

SOCIOLOGY**SOC 110 Introduction to Sociology****3 Credits**

Sociological facts and principles dealing with the scientific study of human relationships. Emphasis on analysis and study of culture and human society, socialization groups and group structures. Stratification, collective behavioral patterns and the concept of social institutions. Initial experiences for students who desire an introduction to the sociological perspective.

3 Class Hours**SOC 111 Social Problems****3 Credits**

The sociology of social and urban problems. Topics may include crime, population, inequality, discrimination, mental illness, attitudes toward work, social control and the dynamics of social change. Students should be aware that individual instructors approach these problems in different ways, depending on students' needs and instructors' interests. SOC 110 Introduction to Sociology is recommended as an initial experience.

3 Class Hours**SOC 120 Ethnic Groups****3 Credits**

Survey of the structure and interrelationships of selective ethnic minority groups. The approach is socio-historical, with an attempt to integrate the major theories and techniques of sociological analysis as applied to issues of ethnic concern.

3 Class Hours**SOC 210 Crime and Deviant Behavior****3 Credits**

The theoretical aspects of deviance as crime, variations in crime rates, the social and psychological causes of crime, other deviant behavior and the salient research discoveries in these areas. Specific areas within criminology such as homicide and suicide from a multidisciplinary approach to permit as broad an understanding of the problem as possible.

3 Class Hours

Prerequisite: SOC 110 Introduction to Sociology

SOC 230 Marriage, Family and Divorce**3 Credits**

Social and personal factors which make for adequate family functioning, the forms the family takes, its internal processes and the functions it serves in society. Covers systematically the important theoretical and experimental ground on those issues relevant to both the scholarly and practice-minded student.

3 Class Hours

Prerequisite: SOC 110 Introduction to Sociology

SOC 299 Independent Study **1-3 Credits**
 An individual student project in sociology which is beyond the scope or requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairperson.
Prerequisite: 3 semester hours in sociology

SPANISH

SPA 101, 102 Beginning Spanish **4, 4 Credits**
 Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours

Prerequisite: SPA 101 Beginning Spanish for SPA 102

SPA 201 Intermediate Spanish I **3 Credits**
 Intensive review and continuation of grammar and syntax. Intensive and extensive reading of literary works of recognized authors. Aural comprehension and oral practice in the classroom and audio-lingual laboratory.

3 Class Hours

Prerequisite: SPA 102 Beginning Spanish

SPA 202 Intermediate Spanish II **3 Credits**
 Intensive and extensive reading of literary works of recognized authors. Classroom discussion and conversation based on these texts, in the language.

3 Class Hours

Prerequisite: SPA 201 Intermediate Spanish I

SPA 203, 204 The Spanish Language Through Its Literature **3, 3 Credits**

Practice in and emphasis on conversation and composition in Spanish, based on the reading of various literary masterpieces from centuries past to the present. (Not offered in 1983-84 academic year).

3 Class Hours each

Prerequisites: SPA 202 Intermediate Spanish II for SPA 203

SPA 203 The Spanish Language Through Its Literature for SPA 204

SPA 205 Spanish Conversation and Composition I **3 Credits**

The art of conversation and writing in Spanish practiced from basic proficiency to that of a more advanced level. Topics of conversation of common, daily interest subjects. Writing of short paragraphs and letters. (Not offered in 1983-84 academic year).

3 Class Hours

Prerequisite: SPA 202 Intermediate Spanish II or equivalent

SPA 299 Independent Study: Spanish **1-3 Credits**

An individual student project concerned with advanced work in a specific area of Spanish. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in Spanish

SPEECH

SPK 100 Basic Speaking **2 Credits**
 Speech communication through voice, words and action. Voice production, diction, platform presence. Organization of ideas. Practice in presenting speeches of different types. Not for Liberal Arts students.
2 Class Hours

SPK 102 Effective Speaking **3 Credits**
 Speech communication through voice, words and action. Voice production, diction, platform presence. Organization of ideas. Practice in presenting speeches of different types.
3 Class Hours

SPK 104 Basic Speaking for International Students **3 Credits**
 Designed to provide international students with practice, articulation and vocabulary needed to increase self-confidence in English conversation, discussion in the classroom and other daily situations.
3 Class Hours

SPK 105 Intermediate Speaking for International Students **3 Credits**
 Designed for international students emphasizing free and controlled conversation and discussion. Continued practice in articulation, phrasing and vocabulary building.
3 Class Hours
Prerequisite: SPK 104 Basic Speaking for International Students or equivalent

SPK 203 Advanced Speaking **3 Credits**
 Designed so that students can review what they have learned in SPK 102 Effective Speaking, learn advanced techniques for informative and persuasive speaking, learn techniques for special speaking occasions. Involvement in a debate as a means of perfecting research techniques, impromptu speaking skills, and the processes of logical thinking and organizing.
3 Class Hours
Prerequisite: SPK 102 Effective Speaking

SPK 299 Independent Study: Speech **1-3 Credits**
 An individual student project concerned with advanced work in a specific area of speech. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.
Prerequisite: 3 semester hours of college level work in speech

THEATER

THR 101 Theater Appreciation **3 Credits**
 Art of the theater to increase understanding and appreciation of drama. A cultural approach considering the interrelationship of all aspects of production including plays, acting, directing, costume, make-up and lighting. Attendance at local productions. (Students taking this course may also be interested in LIT 230 American Drama, LIT 233 World Drama).
3 Class Hours

THR 109, 110 Practicum in Theater Design and Technology 3, 3 Credits

Stage design (both lighting and scenic) and construction techniques are studied first hand, as students participate in actual production of two plays each semester. Problems encountered during a production are analyzed. Individualized instruction is increased as students begin to focus on their particular areas of interest.
3 Class Hours each

THR 111 Beginning Acting 3 Credits

Fundamental acting techniques. Development of individual skills and disciplines relative to external acting techniques. Use of face, voice and movement.
3 Class Hours

THR 112 Acting 3 Credits

Intensive application of acting techniques through scene study and performance. Problems of character analysis, internal acting and style.
3 Class Hours

THR 117 Creative Dramatics 3 Credits

Fundamentals of creative dramatics, its use in teaching, recreation and rehabilitation. Introduction to techniques used and practical application opportunities.
3 Class Hours

THR 151 Theater Production I 3 Credits

Classroom and workshop study relative to production of plays, including historical and dramatic perspective. Script analysis, play selection, audience research, publicity, administration of a theater.
3 Class Hours

THR 152 Theater Production II 3 Credits

Classroom and workshop training for stage production. Special attention to stage management, operation of stage crews, house management. Coordination of visiting and touring theater companies regarding production and logistics.
3 Class Hours

Prerequisite: THR 151 Theater Production I

THR 190 Broome Community College Theater 1 Credit

Students who participate in the plays and performances of the BCC Theater Co. receive one credit per semester. See page 29.

THR 201, 202 Children's Theater 3, 3 Credits

Touring children's theater company during academic year. Performances at area elementary schools for classtime and assembly period programs. Visiting with students pre/post production. Design and construction of costumes, sets and properties. Analysis of children-oriented plays, development of scripts, rehearsal and performance.
3 Class Hours each

THR 203 Summer Touring Children's Theater Company 3 Credits

Touring children's theater company during summer. Performances at area recreation centers, parks, camps and playgrounds. Visiting with children pre/post production. Design and construction of costumes, sets, and properties. Analysis of children-oriented plays, development of scripts, rehearsal and performance.
3 Class Hours

THR 218 Role Study and Characterization 3 Credits

The varied creative processes by which an actor might develop a characterization are studied in theory and explored in practice with emphasis upon scenework.
3 Class Hours

THR 219 Periods and Styles of Acting 3 Credits

Procedures and techniques necessary for acting in theatrical period productions such as Elizabethan, Italian Renaissance, Restoration, Absurdist, and innovative styles.
3 Class Hours

Prerequisites: THR 218 or permission of instructor

THR 221 History of the Theater 3 Credits

History of stage production with emphasis on theater as a performing art. Chronological examination of theater activity as a mirror of social and cultural experience from primitive times through the Renaissance.
3 Class Hours

THR 222 History of the Theater 3 Credits

History of stage production from the 18th Century to the present, with attention to the contribution of literature and the fine arts to stage development.
3 Class Hours

THR 231 Stage Directing I 3 Credits

Examination of the perspective of the director in relation to himself, the play, the actors, designers, playwright, and the collaborative evolution of the production. Development of directing methods and techniques in terms of casting, pictorial emphasis and harmony, rehearsal and production procedures. Preparation of prompt book and direction of scenes. Proscenium and non-proscenium techniques.
3 Class Hours

THR 232 Stage Directing II 3 Credits

Detailed analysis of directing in relation to theatrical styles and periods. Examination of the techniques of such directors as Meyerhold, Antoine, Guthrie and Kazan. Direction of pertinent scenes.
3 Class Hours

THR 299 Independent Study: Theater 1-3 Credits

An individual student project concerned with advanced work in a specific area of theater. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in theater

TOOL AND DIE MAKING

TDA 111 Blueprint Reading 3 Credits
Lines, dimensioning notes. Interpretation of blueprints as used in industry, making plans for operations. Orthographic projection, sketching as related to detail and assembly drawings used in machine shop. Interpretation of drawings of complex parts and mechanisms for features for fabrication, construction and assembly.
3 Class Hours

TDA 113 Survey of Basic Industrial Safety and First Aid 2 Credits
Work area safety, safe material handling, tool and equipment safety, machinery safeguards, personal protection, electrical safety, hazardous materials and operations, fire prevention, understanding OSHA, first aid.
2 Class Hours

TDA 114 Benchwork 2 Credits
Description or use of work benches, vises, clamps, hammers, cold chisels. Characteristics of files and filing methods, adjustable and non-adjustable wrenches, twist drills, reamers, broaches, threading taps and dies, hacksaws, contour machines, screw drivers, pliers, shears, surface and height gages, combination sets and automatic punches. Instructions on how to scribe horizontal, vertical, inclined, parallel and perpendicular lines as well as circles and circular areas, cranks, squareness, arms, holes, keyways, templates, cams, sprockets.
2 Class Hours

TDA 120 Precision Measurement and Inspection 3 Credits
Measuring tools and instruments, simple though complex. Micrometers, verniers, gage blocks, height gages, sine bar, super micrometer, comparators, surface finish comparison, test indicators, toolmakers microscope and optical flats.
3 Class Hours
Prerequisites: MET 113 Engineering Drawing I, MAT 107 Basic Technical Mathematics II and MET 121 Manufacturing Processes I

TDA 130 Tool Grinding 2 Credits
Wheel selection and shapes, oil-stones, honing cutting tools, grinding, single-point tools, angle calculations, universal grinder, drilling grinding, testing drill points. Grinding milling cutters, clearance grinding, tooth rest, grinding side, shank, angular inserted-blade, and helical cutters. Gear cutters, hobs, reamers, taps, radial and tangential chasers. Grinding carbide tools, grinding internal, slab broaches.
1 Class Hour, 2 Laboratory Hours
Prerequisites: MAT 107 Basic Technical Mathematics II

TDA 132 Statics 2 Credits
Vectors, their composition and resolution, colinear, coplaner, concurrent and non-concurrent force systems, friction, free body diagrams, tension, shear, compression, first moments, centers of gravity, moments of inertia and truss analysis.
2 Class Hours
Prerequisite: MAT 107 Basic Technical Mathematics II

TDA 140 Production Processes 3 Credits
Theory and application of multi-operation tooling. Automatic tool changes; numeric and other positioning systems to turning, milling, drilling, broaching, grinding, honing. Production inspection techniques including airgauging, coordinate measuring machines
3 Class Hours
Prerequisite: MET 122 Manufacturing Processes II

TDA 200 Metallurgy 2 Credits
Ferrous and non-ferrous alloys including annealing, normalizing, quench hardening, tempering, age hardening, austempering. Hardness testing, microscopic examination of metallic structures, phase modification, phase diagrams. Laboratory exercises to support theory.
1 Class Hour, 2 Laboratory Hours
Prerequisite: MET 121 Manufacturing Processes I

TDA 230 Tool Design 4 Credits
Introduction to the problems of tool design with emphasis on planning the processes of production, designing and developing the necessary tools, and utilizing available manufacturing facilities. Practical analysis and comparison of the use and cost of tools, jigs and fixtures, dies, molds and gages as they are used in modern manufacturing.
4 Class Hours
Prerequisites: MET 122 Manufacturing Processes II and MAT 107 Basic Technical Mathematics II

TDA 235 Strength of Materials 3 Credits
Theory of stress and strain as applied to select engineering materials, particularly important in the design and construction of tools and dies. Studies in tension, compression, shear, flexure, thermal changes in metallic and non-metallic materials.
3 Class Hours
Prerequisite: TDA 132 Statics

TDA 248 Hydraulics and Pneumatics 3 Credits
Basic theory of hydraulic and pneumatic systems. Combinations of systems in various circuits, basic designs and functions of circuits and motors, controls, electro-hydraulic servo-mechanisms, plumbing, filtration, accumulation and reservoirs.
2 Class Hours, 2 Laboratory Hours
Prerequisite: TDA 132 Statics

TDA 250 Control Systems 3 Credits
Hydraulic, pneumatic, mechanical, electrical and electronic control systems and components. Basic description, analysis and explanation of operation. Typical performance characteristics, limitations on performance accuracy, applications and their utilization in industrial processes.
3 Class Hours
Prerequisites: MET 122 Manufacturing Processes II and TDA 248 Hydraulics and Pneumatics

TDA 261 Introduction to Quality Control and Inspection 3 Credits
Introduction to inspection devices and practices. Basic statistical techniques as they relate to the use of control chart sampling plans and related quality control procedures.
3 Class Hours
Prerequisite: MAT 107 Basic Technical Mathematics II

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FIRE PROTECTION TECHNOLOGY

See this heading under Adjunct Faculty

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M.A., University of Chicago
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Emeritus

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Emeritus

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LIBERAL ARTS AND SCIENCES

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Emeritus

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MECHANICAL ENGINEERING TECHNOLOGY

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HERBERT L. DURST, Prof.
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M.S., Rochester Institute of Technology
DOUGLAS RITTENHOUSE, Asst. Prof.
Teaching Certification, University of the State of New York
Emeritus
MARION A. FORBES
EDWIN P. WALSH

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DUANE WHITTAKER, Asst. Prof.

B.S., SUNY College at Cortland

PHYSICAL PLANT

RALPH WALTER
Assistant to Vice President

PHYSICS

See Engineering Science and Physics

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See Community Relations

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REGISTRAR'S OFFICE

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TOOL AND DIE MAKING

Appointment of Coordinator Pending
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ADJUNCT FACULTY

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COMPUTER STUDIES

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STATE UNIVERSITY OF NEW YORK

CLIFTON R. WHARTON, JR., Chancellor

Broome Community College is one of the 64 colleges that comprise the State University of New York (SUNY), which was established by the State Legislature in 1948. The 64 units include 30 locally-sponsored two-year community colleges like Broome.

The University's 64 geographically dispersed campuses bring educational opportunities within commuting distance of virtually all New York citizens. In academic 1982-83 more than 380,000 students enrolled in its classrooms or pursued study at home, at their own pace, through such innovative institutions as Empire State College, a campus without walls. Of the 380,000, about 30 percent are 24 years of age or older.

The University is uniquely organized into a system comprised of:

Four University centers, two medical centers, 12 colleges of arts and sciences, a non-residential college, four specialized colleges, five statutory colleges, six agricultural and technical colleges, and 30 locally-sponsored community colleges.

In addition to baccalaureate studies, 12 of the senior campuses offer graduate study at the doctoral level, and 22 at the master's level.

The two-year colleges offer associate degree opportunities in a wide range of technical areas. They also provide transfer programs for students wishing to continue to the baccalaureate degree. In the 1982-83 college year, the community colleges enrolled more than 184,000 students. This number is about equally divided into full-time and part-time categories. Ten Educational Opportunity Centers serve the educationally deprived by upgrading occupational skills for more gainful employment and identifying students with college potential to prepare them for enrollment in the state's public and private colleges.

State University is governed by a Board of Trustees, appointed by the Governor, which determines the policies to be followed by the 34 State-supported campuses. The 30 community colleges operate under the program of State University and have their own local boards of trustees. SUNY's motto is "To Learn-To Search-To Serve," which emphasizes the University's three-fold mission of education, research and public service.

During its brief history, State University has graduated more than 855,000 alumni, the majority of whom are pursuing their careers in communities across the state.

UNIVERSITY CENTERS

State University at Albany
State University at Binghamton
State University at Buffalo
State University at Stony Brook

COLLEGES OF ARTS AND SCIENCE

College at Brockport
College at Buffalo
College at Cortland
Empire State College
College at Fredonia
College at Geneseo
College at New Paltz
College at Old Westbury
College at Oneonta
College at Oswego
College at Plattsburgh
College at Potsdam
College at Purchase

COLLEGES AND CENTERS FOR THE HEALTH SCIENCES

Health Sciences Center at Buffalo
University Center
Health Sciences Center at
Stony Brook University Center
Downstate Medical Center at
Brooklyn
Upstate Medical Center at Syracuse
College of Optometry at New York
City

AGRICULTURAL AND TECHNICAL COLLEGES

College at Alfred
College at Canton
College at Cobleskill
College at Delhi
College at Farmingdale
College at Morrisville

COMMUNITY COLLEGES

(Locally-sponsored, two-year colleges under the program of State University)

Adirondack Community College at Glens Falls
Broome Community College at Binghamton
Cayuga County Community College at Auburn
Clinton Community College at Plattsburgh
Columbia-Greene Community College at Hudson
Community College of the Finger Lakes at Canandaigua
Corning Community College at Corning
Dutchess Community College at Poughkeepsie
Erie Community College at Williamsville, Buffalo, Orchard Park
†Fashion Institute of Technology at New York City
Fulton-Montgomery Community College at Johnstown
Genesee Community College at Batavia
Herkimer County Community College at Herkimer
Hudson Valley Community College at Troy
Jamestown Community College at Jamestown
Jefferson Community College at Watertown
Mohawk Valley Community College at Utica
Monroe Community College at Rochester
Nassau Community College at Garden City
Niagara County Community College at Sanborn
North Country Community College at Saranac Lake
Onondaga Community College at Syracuse
Orange County Community College at Middletown
Rockland Community College at Suffern
Schenectady County Community College at Schenectady
Suffolk County Community College at Selden, Riverhead, Brentwood
Sullivan County Community College at Loch Sheldrake
Tompkins Cortland Community College at Dryden
Ulster County Community College at Stone Ridge
Westchester Community College at Valhalla

SPECIALIZED COLLEGES

College of Environmental Science and Forestry at Syracuse
Maritime College at Fort Schuyler
College of Technology at Utica/Rome
†Fashion Institute of Technology

*STATUTORY COLLEGES

College of Agriculture and Life Sciences at Cornell University
College of Ceramics at Alfred University
College of Human Ecology at Cornell University
School of Industrial and Labor Relations at Cornell University
College of Veterinary Medicine at Cornell University

*These operate as "contract colleges" on the campuses of private universities.

†While offering a limited number of baccalaureate degree programs, in addition to the associate degree, FIT is financed and administered in the manner provided for community colleges.

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COLLEGE CALENDAR FOR 1983-84

FALL SEMESTER 1983

Registration	August 22-26 (Mon-Fri)
Classes Begin	August 29 (Monday)
*Last Day for 100% Tuition/ Fee Refund	September 2 (Friday)
Labor Day (No classes)	September 5 (Monday)
*Last Day for 50% Tuition/ Fee Refund	September 9 (Friday)
*Last Day for 25% Tuition/ Fee Refund	September 16 (Friday)
Thanksgiving Recess	November 21-25 (Mon-Fri)
Last Day of Classes	December 19 (Monday)
Examination Period	December 20-22 (Tues-Thur)
Grades Due	December 27 (Tuesday)

SPRING SEMESTER 1984

Registration	January 16-20 (Mon-Fri)
Classes Begin	January 23 (Monday)
*Last Day for 100% Tuition/ Fee Refund	January 27 (Friday)
*Last Day for 50% Tuition/ Fee Refund	February 3 (Friday)
*Last Day for 25% Tuition/ Fee Refund	February 10 (Friday)
Easter Break	April 16-20 (Mon-Fri)
Last Day of Classes	May 12 (Saturday)
Examination Period	May 14-16 (Mon-Wed)
Grades Due	May 18 (Friday)
Graduation	May 31 (Thursday)

*Registrar's office must be notified by this date. Students in classes that meet only on Saturdays will have until 12 noon on the subsequent Monday to notify the Registrar's office on withdrawal and still qualify for the appropriate tuition/fee refund.

MAP OF THE CAMPUS

1. TITCHENER HALL

Engineering Science and Physics
Liberal Arts
Mathematics
Computer Studies

2. WALES BUILDING

Admissions Office
Administrative Offices
Alumni Association
Center for Continuing Education
Counseling and Student Development
Center
Educational Technology
Finance Office
Financial Aid
BCC Foundation
Health Service
Registrar's Office
Public Relations Office
Student Affairs Office

3. SCIENCE BUILDING

Chemical Technology
Dental Hygiene

4. ELECTRICAL BUILDING

Electrical Technology

5. STUDENT CENTER

Book Store
Cafeteria
Gymnasium
Little Theater
Physical Education

6. MAINTENANCE BUILDING

7. THE UNION

Housing
Student Activities
Student Lounge

8. MECHANICAL BUILDING

Civil Technology
Mechanical Technology
Special Career Programs

9. CECIL C. TYRRELL LEARNING RESOURCES CENTER

Audio-Visual
Developmental Centers
Mathematics
Reading and Study Skills
Writing
Educational Opportunity Program
Library
Science Learning Center

10. BUSINESS BUILDING

Accounting and Business Administration
Computer Center
Marketing
Medical Assistant
Medical Record Technology
Radiologic Technology
Secretarial Sciences

11. FACULTY OFFICES

12. 901 FRONT STREET

Biological Sciences
Medical Laboratory Technology
Nursing

13. "ALMS HOUSE" BUILDING

Art Studio

NIMMONSBURG CENTER

Classes are also held at the Nimmonsburg Center, one mile north of the campus on Front Street.

